

A REVISION OF THE AUSTRALIAN BOMBYLIIDAE (DIPTERA). PART II.

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Subfamily BOMBYLIINAE.

Head usually smaller than in the Exoprosopinae, rarely transverse or wider than the thorax; occiput little convex, never bilobate or with a central cavity; eyes contiguous or subcontiguous in the male, distinctly separated in the female, their hind borders entire. Antennae approximate at the base, porrect, sometimes longer than the head, with an apical or subapical style of variable form, sometimes imperceptible. Proboscis variable in length, generally elongate and porrect; palpi always one-jointed.

Thorax generally arched, often much so, usually with dense furry pubescence and some bristly hairs.

Abdomen usually short, broad and rounded, rarely conical, with dense furry pubescence and long bristles or bristly hairs.

Legs generally long and slender, the femora with strong spines below, sometimes absent on the fore femora, and a circlet of apical spines to the tibiae; spines on tibiae arranged in three rows.

Wings stout, generally with well developed lobe and alula; R_{2+3} usually curved, sometimes almost straight, and arising from R_{4+5} well distant from r-m; cells R_5 and Cu sometimes closed.

This subfamily contains five genera in Australia, viz. *Bombylius*, *Systoechus*, *Dischistus*, *Sisyromyia*, and *Anastoechus*. *Sisyromyia* is confined to this region and *Anastoechus* is recorded from Australia for the first time. The descriptions of many of the species which come within the subfamily are very inferior and brief, and in many cases I have had to rely on White and Hardy, not only for the identification of these species, but for their generic position. White, fortunately, was able to examine many of Walker's types in the British Museum, and his identifications are no doubt correct.

Key to the Genera of the Bombyliinae.

1. Cell R_2 open, at most closed at the wing border 2
Cell R_3 closed well before the wing border 3
2. Cell R much longer than cell M; i.e. the vein r-m is placed near or beyond the middle of cell mc *Dischistus* Loew.
Cells R and M of about equal length; i.e. the vein r-m is placed near the base of cell mc *Sisyromyia* White.
3. Cells R and M of about equal length 4
Cell R much longer than cell M *Bombylius* Linnaeus.
4. Face prominent and moderately pilose; head not as broad as thorax
..... *Systoechus* Loew.
Face rounded and very densely pilose; head as broad as thorax
..... *Anastoechus* Osten Sacken.

Genus SYSTOECHUS Loew.

Systoechus, Loew, *Neue Beitr.*, iii, 1855, 34; White, *Proc. Roy. Soc. Tas.*, 1916, 196; Hardy, *Proc. Roy. Soc. Tas.*, 1921, 69; 1923, 83.

Genotype, *Bombylius sulphureus* Mikan, by designation of Coquillett, 1910.

Head small, semicircular, set rather low and closely applied to thorax; occiput moderately convex; eyes in male, usually contiguous for various distances, in female, wide apart; frontal triangle of moderate size, or rather large; face prominent between the eyes, clothed with dense appressed pile and erect hairs; proboscis very long, usually slender, with rather small labella; palpi usually short and thin. Antennae usually as long as the head, sometimes longer, the first segment long and cylindrical, the second short, about half as long as the first, the third longer than the first two together, sometimes much longer, variable in shape, constricted at base, with a small jointed style, sometimes a little subapical.

Thorax broad, somewhat oval, arched, with dense furry pubescence, the postalar bristles usually not conspicuous; scutellum large, semicircular, clothed like the thorax, the bristles long and slender; squamae not very large, with a rather sparse hairy fringe; halteres slender.

Abdomen short, usually broad and rounded or somewhat obconical, clothed with dense furry pubescence, and with long bristles or bristly hairs on the hind borders of the segments.

Legs long and thin, with distinct spines; hind legs elongate, hind and middle femora with long spines below, more numerous on the former; pulvilli distinct; empodium minute.

Wings at rest, outspread, rather narrow, with well developed alulae; cell Sc. except towards apex, almost obliterated by the contiguity of the veins Sc and R₁; R₂₊₃ usually curved at apex, never recurrent, rarely straight; r-m placed well before the middle of cell mc, so that cells R and M are of approximately equal length; cell R₅ closed well before the margin; cell Cu open; apical cross-vein of cell mc never or very rarely longer than r-m.

Range.—World-wide.

Key to the Species of Systoechus.

1. Apex of abdomen with dark tufts; abdomen with a dark band 2
 Apex of abdomen without such tufts; abdomen without a dark band 5
2. Wings usually with clear spots; fore tibiae of male with small spines of almost equal size *platyrus* Walker
 Wings never spotted; fore tibiae of male with some very large spines on its apical half 3
3. Middle tibiae with two rows of very large and strongly developed spines; pubescence red tinted *callynthrophorus* Schiner
 Middle tibiae devoid of such spines; pubescence rarely red tinted 4
4. Fore tibiae with one or two much developed apical spines; apical tuft of abdomen divided at apex only; femora partly brownish *albiceps* Macquart
 Fore tibiae without such apical spines; apical tuft of abdomen wholly divided; femora black *sericans* Macquart
5. Large species with tawny pubescence 6
 Small species with yellowish or white pubescence 7
6. Head not nearly as broad as thorax; pubescence tawny; wings smoky *australis* Guérin
 Head about as broad as thorax; pubescence bright tawny; wings almost hyaline, at most yellowish at base and along the fore margin *distinctus* Walker
7. Pubescence almost wholly white *albohirtus*, n. sp. 8
 Pubescence yellowish 8
8. Face with white hairs 9
 Face without white hairs 10

9. Third antennal segment very broad; abdomen somewhat reddish *rubidus*, n. sp.
Third antennal segment not in the least broad; abdomen with rather large yellowish lateral areas *cinctiventris*, n. sp.
10. Pubescence bright yellow; wings fairly clear *flavovillosus*, n. sp.
Pubescence pale yellow; wings smoky *pallidus*, n. sp.

The females of *albiceps*, *sericans* and *callynthrophorus* are not included in the above key. That of *callynthrophorus* may be recognized by the reddish colour of the pubescence in conjunction with the brownish femora; that of *albiceps* by the partly brownish femora and the undivided abdominal tuft and that of *sericans* by the black femora and wholly divided tuft, the two latter species but rarely having any reddish tint to the pubescence.

Eleven species have been recognized as belonging to the genus, five being described as new. Nothing is known of the life histories of any of the species, though the habits of the adults point to their being parasitic on Hymenoptera and Orthoptera. In Europe and America this genus has been recorded as parasitic on the egg-masses of grasshoppers and the manner in which some of our smaller species alight on the ground makes it possible that the hosts of the larvae are somewhat similar in Australia. Most of the species occur from early spring to about midsummer, the larger banded species, *platyurus*, *sericans*, *albiceps* and *callynthrophorus*, being rather numerous during the flowering of *Leptospermums*. From the manner in which these larger species fly, and the buzzing sound produced by the rapid vibrations of their wings whilst hovering, the popular name of "bee flies" has no doubt been derived.

Distribution.—The genus, so far as known, is principally distributed along the eastern portion of the Continent, and appears richest in species in Queensland. Of the eleven species known, *cinctiventris* and *flavovillosus* occur in Queensland only; *albiceps* occurs from Queensland, through New South Wales to Victoria, and appears mainly coastal in habitat; *sericans* from Western Australia, probably across the central areas, to Southern Queensland; *australis* from New South Wales to South-eastern Queensland; *rubidus* and *pallidus* from New South Wales to South-western Queensland. Of the remaining species, *platyurus* is recorded from all States, but is confined to the southern half of the Continent; *distinctus* and *callynthrophorus* from New South Wales and *albohirtus* from South Australia.

SYSTOECHUS PLATYURUS (Walker).

Bombylius platyurus, Walker, *List Dipt. Brit. Mus.*, ii, 1849, 286.—*Systoechus platyurus*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 69; 1923, 83.—*Bombylius crassus*, Walker, *List Dipt. Brit. Mus.*, ii, 1849, 287; Hardy, *Proc. Roy. Soc. Tasm.*, 1923, 83.—*Systoechus crassus*, White, *Proc. Roy. Soc. Tasm.*, 1916, 196.—*Bombylius notatipennis*, Macquart, *Dipt. Exot.*, suppl. 5, 1854, 78.—*Bombylius punctipennis*, Thomson, *Eug. Resa. Dipt.*, 1868, 487.

♂. Head mainly greyish, frons and upper portion of face somewhat darker; occiput moderately convex, clothed with short, dense, and equal pale golden or pale reddish hairs, which become much paler below to form a soft, whitish, sparse, beard; eyes contiguous from just below the ocellar tubercle for about one-third the length of the frons, their upper and inner facets slightly enlarged; ocellar tubercle black, rather small, with long, erect, pale golden and reddish hairs; frontal triangle large, clothed with dense, appressed, pale golden pile, the median groove distinct; face with dense pale golden and soft hairs, the basal portion of the cheeks bare; mouth opening long and broad, its borders yellowish with a short golden

moustache, and bearing on the upper border a tuft of about six short, bristly, reddish hairs. Antennae longer than the head, the first segment with dense pale golden, and sometimes with some intermixed black hairs, the second short, not more than half the length of the first, the third longer than twice the length of the first and second together, somewhat elongate conical in shape, its apical fourth very slender and almost linear, and provided with a small but distinct apical style. Proboscis usually very elongate and slender, very variable in length, usually about three times the length of the oral opening; palpi small, slender, blackish.

Thorax grey-black, with three black, narrow, longitudinal stripes, the whole densely clothed with short pale reddish or golden hairs which, viewed from above, appear rather paler on the sides, and from the front the whole has a very pale golden yellow sheen; the posterior portion contains many more definitely reddish hairs, which are more concentrated near the scutellum; postalar calli with tufts of black hairs below; scutellum grey-black, clothed with dense greyish pile, and provided with long, reddish bristles; pleurae and breast clothed with dense hairs, rather paler than those on the dorsum; squamae very pale with a dense pale fringe; halteres brownish with reddish knobs.

Abdomen blackish, broad and rounded, clothed with dense, intermixed reddish and grey pubescence, the latter being rather appressed; posterior border of second segment with a band of dense black and intermixed reddish hairs, which extends laterally and is somewhat whitish immediately below; on the apical segments is a very dense tuft of longer black and some intermixed reddish hairs, which appears to be divided into two distinct apical tufts, the dorsum thus appearing to be clothed with dense reddish hairs with a black band and two apical black tufts; bristles reddish; venter with dense, pale reddish and intermixed white hairs.

Legs mainly reddish, the basal half of the fore femora, and the bases of the middle and posterior femora, and apical tarsi, black; coxae black, and with femora below, with long pale hairs, the legs otherwise with reddish or somewhat golden scales, the femora with appearances of white scales at their bases; spines reddish; hind femora with a row of about twelve long spines below; middle femora with few similar spines below; apical spines of tibiae rather short; pulvilli pale.

Wings brown at the base and along the fore margin for about two-thirds the length and one-third the breadth, the remainder of the wing greyish or pale smoky; greyish area with five fuscous spots placed on various cross-veins and bifurcations; apical cross-vein of cell *mc* rather large.

♀. Frons very broad at vertex, clothed with appressed pale golden pile, with erect black bristly hairs and some golden or reddish, short, bristles.

Length of body, 9-15 mm.; of wing, 8-14.5 mm.

Hab.—Queensland: Brisbane, Bribie Is.; Victoria: Cheltenham; South Australia: Mt. Pleasant, Kangaroo Is.; Western Australia: Albany, Perth, Geraldton, King George's Sound, Kelmscott, Smith's Hill; Tasmania: Hobart, George Town, Bridgeport.

I have no record of this species from New South Wales, though I feel certain the species occurs in that State, both *notatipennis* and *punctipennis* being described from Sydney.

This beautiful *Systoechus* is the first of the genus to appear on the wing around Brisbane. Its earliest record there is the end of July. It continues till about the end of September, and is particularly common on *Leptospermums* from the end of August to the middle of September. In Tasmania the dates range throughout December; in Victoria, October; in South Australia, November, and in Western

Australia, December (there is only one specimen of a series of nine from this State with the date of capture on the label).

In the series before me there are 17 ♂, 10 ♀ from Queensland, 3 ♂, 2 ♀ from Tasmania, 3 ♂ from South Australia, 2 ♂, 1 ♀ from Victoria, and 2 ♂, 7 ♀ from Western Australia. The description given above is taken from the Tasmanian form, described by White as *crassus*. The species from the eastern coast, and from Perth (W. Aust.) are practically identical with *crassus*, though the species around Brisbane is generally rather paler and smaller. On Bribie Island and at Dunwich, Moreton Bay, the pubescence becomes almost a bright red. One ♂ and two ♀ from Albany, Geraldton, and King George's Sound (W. Aust.) have the pubescence of the head white, that of the body greyish, with intermixed reddish hairs and bristles. The spots on the wings are very faint and in one specimen almost absent. This form is without doubt Walker's *platyurus*, which was described from Western Australia. The specimens from South Australia appear to be similar, the spots on the wings being hardly discernible. These specimens are badly damaged and very greasy, but, as far as I can judge, the pubescence is also mainly whitish. The form *platyurus* is apparently very closely related to *callynthrophorus* and its allied species, but the fore tibiae of the male never possess the sexual spines as found in *callynthrophorus*. In general, *platyurus* is a large species, which varies greatly in colour and in the distinctness of the infuscations of the wings, the former varying from greyish through pale golden to reddish, and the latter sometimes hardly visible. The species contains two distinct forms, the grey form, *platyurus*, which is confined to Western Australia and possibly South Australia, and the reddish form with distinctly spotted wings, mainly to Tasmania and the eastern coast.

SYSTOECUS ALBICEPS (Macquart).

Bombylius albiceps, Macquart, *Dipt. Exot.*, suppl. 3, 1848, 36.—*Systoechus albiceps*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 70.—*Bombylius vetustus*, Walker, *List Dipt. Brit. Mus.*, ii, 1849, 286.—*Systoechus vetustus*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 69.—*Bombylius penicillatus*, Macquart, *Dipt. Exot.*, suppl. 4, 1850, 118.

♂. Head mainly greyish; occiput moderately convex, densely clothed with long silvery white hairs, which completely cover a row of short, pale brown bristles; ocellar tubercle rather small, with some long, black, bristly hairs and some shorter, white hairs; eyes contiguous from below the ocellar tubercle for about one-third the length of the frons, the upper facets hardly larger; frontal triangle large and broad, clothed with dense, appressed, white pile; median groove very distinct; face entirely clothed with dense white hairs, which are continued to the chin, which bears a soft and rather sparse beard. Antennae entirely black, similar to those of *platyurus*. Proboscis elongate and slender with enlarged labella, usually about two and one-half times the length of the mouth opening, which is long and broad, with pale borders; palpi small, slender, dark brown.

Thorax greyish, clothed with short, dense and equal whitish hairs, somewhat shining white in front and on the sides, and which, viewed from the front, has a beautiful silvery-white sheen; posterior half of thorax with numerous intermixed black hairs, more conspicuous immediately anterior to the scutellum; bristles mainly pale brown, with intermixed black, the presutural bristles sometimes well marked; scutellum greyish, with similar tomentum to the thorax, and long, black, and a few intermixed brownish bristles, stronger on the margin; pleurae and

breast greyish, densely clothed with shining white hairs; squamae pale with a dense white fringe; halteres with blackish knobs.

Abdomen greyish, broad and rounded, clothed with dense, grey, appressed, and grey and white erect hairs, the latter more conspicuous on the third and fourth segments; posterior border of second segment with a band of dense, black hairs; apical segments with a dense tuft of long black hairs, divided at the extreme apex by some whitish or greyish hairs; bristles black, rather weak and small, much longer and stronger towards the apex, where there may be a few brown bristles intermixed; venter grey, densely white pollinose.

Legs: Coxae dark grey, basal half of femora, apices of femora and tibiae, and all apical tarsi black; rest of femora and tibiae somewhat brownish, the hind femora and tibiae darker, and all femora paler beneath; coxae and femora beneath with long white hairs; femora and tibiae with white scales, though the femora sometimes appear to be yellow-scaled above, and in certain lights the scales on the tibiae appear golden; fore femora with two, middle femora with about five, and hind femora with twelve long spines beneath; fore tibiae with usually four long black spines on the apical half, the spines being much longer and stronger than the remaining spines, and partly hidden by dense black and white or grey hairs, the latter appearing as a definite encircling band; two of the apical spines of the fore tibiae, the inner and outer, are much prolonged, being very much longer than the other apical spines, the outer spine generally longer and more apparent.

Wings somewhat subhyaline, faintly brown at the base and along the fore margin; apical cross-vein of cell mc rarely equal to r-m.

♀. Generally larger than the male, the broad frons being clothed with dense white pile, with some erect brownish bristles and soft white hairs; fore tibiae never with prolonged spines at apex or with the strong black spines and accompanying black and white tomentum of the male; apical tuft of abdomen very dense and not divided at apex.

Length of body, 6-13 mm.; of wing, 5.5-12 mm.

Hab.—Queensland: Brisbane (August to September); N. S. Wales: Sydney, Woy Woy, Wentworth Falls (October); Victoria: Williamstown (October).

SYSTOECHUS SERICANS (Macquart).

Bombylius sericans, Macq., *Dipt. Exot.*, suppl. 4, 1850, 116; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 69.—*Systoechus pausarius*, Jaennicke, *Abhand. Senck. Nat. Ges.*, vi, 1867, 348; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 70.

This species is very similar in appearance to *albiceps*, but the black band across the abdomen appears rather narrower, and the dense black hairs at the apex are divided into two separate tufts. The femora are wholly black, and the tibiae rather dark. The main difference lies in the spines of the fore tibiae. The long, strongly developed spines on the apical half, with the accompanying black and white hairs, are not so well marked as in *albiceps*, and the spines at the apex are all of nearly equal length, the two inner and outer spines never becoming so long and strong.

There are 25 ♂, 5 ♀ in the series before me, many of which are in a more or less damaged condition. The tufts on the apex of the abdomen certainly appear distinctly separated, and the black band narrower. The difference in the development of the tibial spines, especially of those on the apex, and the wholly black

femora, form reliable characters for the separation of the two species. The pubescence of the body has also a faint tawny tinge.

The female, as in *albiceps*, does not possess the strongly developed spines of the fore tibiae, but may be recognized by the wholly black femora, and the separated tufts at the apex of the abdomen.

Length of body, 8-13 mm.; of wing, 7-12.5 mm.

Hab.—Queensland: Eidsvold (October), Chinchilla (October to September), Morven and Roma (September), Brisbane (September); W. Australia: Badgerly, Merredin (no date).

SYSTOECHUS CALLYNTROPHORUS Schiner.

Systoechus callynthrophorus. Schiner, *Reise Nov.* 1868, 137; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 70.—*Bombylius spinipes*, Thomson, *Eug. Resa*, Dipt., 1868, 488; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 70.

This species is closely related to both *albiceps* and *sericans*. From both it may be distinguished by the golden or pale reddish bristles, the intermixed reddish hairs, the band across the abdomen being mainly reddish, and the apical tuft with long intermixed red hairs. It agrees with *albiceps* in having the apical tuft separated at the extreme apex only, and in sometimes possessing long inner and outer apical spines on the fore tibiae, the outer spine usually being more prominent. The genital spines on the apical half of the fore tibiae are also present and, in addition, there are two rows of three very long, strong, and erect spines on the middle tibiae, which are accompanied by similar black and white hairs, though not so marked. These latter spines are always in two rows, though in some specimens, one of the rows contains two spines only. The legs have the femora and tibiae an almost unicolorous pale brownish or yellowish, the femora being at most black at the extreme bases only.

The fore and middle tibiae of the female lack the long strong spines of the male, and the apical tuft of the abdomen is wholly black.

Length of body, 8-11 mm.; of wing, 7-10.5 mm.

Hab.—N. S. Wales: Sydney and Woy Woy (September to October).

In his catalogue of the Australian Bombyliidae, G. H. Hardy (1921) identified the grey species, with the abdomen black banded and tufted, as *vetustus*, with which he placed *sericans*, *penicillatus*, *pausarius*, *callynthrophorus* and *spinipes* as synonyms. In the collections examined there were 57 ♂, 20 ♀, all of which were primarily placed under the name *vetustus*. A study of this material, however, revealed the presence of three distinct species, the main differences lying in the development of the spines of the fore and middle tibiae, in the colour of the femora and in the division or otherwise of the apical black tuft of the abdomen. The first character was found to be sexual and possessed by the males only, and for the separation of the females the other characters had to be utilized. Neither of these is very satisfactory, but at the present time I am unable to locate any more definite characters.

In view of the inadequacy of the original descriptions, it has been rather difficult to place the three species, *sericans*, *albiceps*, and *callynthrophorus*. The latter species and Thomson's *spinipes* are regarded as the species from Sydney with the reddish abdominal band, the yellowish legs, and reddish bristles, *callynthrophorus* taking precedence; *sericans* and *pausarius* are both described as possessing black femora and separated apical tufts. Here are placed the species from Southern and Western Queensland and Western Australia. The remaining

species, *albiceps*, is determined with *vetustus* and *penicillatus* as synonyms, as in the descriptions the femora are noted as brownish or partly brownish, and the bristles of the body, black.

SYSTOECHUS AUSTRALIS (Guérin).

Bombylius australis, Guérin, *Voy. Coq.*, Zool., pt. 2, 1830, 294; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 75.—*Systoechus australis*, Hardy, *Proc. Roy. Soc. Tasm.*, 1923, 84.

♂. Head mainly greyish, upper part of face and frons darker; occiput moderately convex, clothed with dense, equal, pale tawny hairs, with which are mingled some darker bristles; ocellar tubercle black, with some long dark hairs; eyes almost contiguous at a point immediately below the ocellar tubercle, their upper facets distinctly enlarged; frontal triangle of moderate size, clothed with appressed golden scales, and with a few pale golden hairs near the inner eye margins; face densely clothed with pale golden hairs, which become almost whitish on the chin, forming a somewhat sparse beard; the hairs on the mouth borders form a thin moustache, which does not extend the full length of the cheeks; oral opening rather broad, its borders pale yellowish. Antennae black, not as long as the head, the first segment with long pale golden hairs, much longer beneath, the third segment longer than the first two together, broadening medianly, thence tapering to a blunt apex, which is provided with a stout style. Proboscis black, usually about three times the length of the oral opening, slender, with rather enlarged labella; palpi small, slender, brownish.

Thorax blackish, with reddish calli, densely clothed with short, pale tawny hairs which, viewed from the front, have a pale golden or yellowish sheen; post-alar calli with a tuft of black hairs; scutellum black, broadly reddish on the margin, with similar pubescence; bristles strong and dark brownish; pleurae and breast much paler haired, the mesopleural tuft somewhat tawny above; squamae brown with a pale yellowish fringe; halteres brown with yellow knobs.

Abdomen broad and rounded, somewhat dark greyish, faintly reddish on the sides of the two basal segments; the whole clothed with appressed pale golden scales and dense tawny hairs, which are more dense laterally, and somewhat paler apically; bristles strong, dark brown, forming complete rows on the hind borders of the segments; venter densely pale haired.

Legs with coxae blackish, femora, tibiae, and basal tarsi pale brownish or yellowish, the apical tarsi darker; coxae and femora beneath with long whitish hairs; otherwise clothed with whitish scales which, against the yellowish ground colour, appear pale golden; middle femora with few, hind femora with many strong spines beneath; pulvilli pale.

Wings yellowish at base and along fore margin to the apex of cell Sc; remainder of wing dark smoky, clearer towards apex and hind margin.

♀. Frons very broad at vertex, clothed with dark golden scales and some erect black and golden hairs.

Length of body, 10-14 mm.; of wing, 9.5-12 mm.

Hab.—Queensland: Stradbroke Is., Mt. Tambourine (September); N. S. Wales: National Park and Woodford (November), Barrington Tops (February), Sydney (December), Blue Mts. (January).

In two males from Woodford and Barrington Tops, N. S. Wales, the body pubescence is much duller than in the rest of the series and in one of these males (Barrington Tops) the basal half of the fore and middle tibiae is black.

SYSTOECHUS DISTINCTUS (Walker).

Bombylius distinctus, Walker, *Ins. Saund.*, Dipt., 1850, 201.—*Systoechus distinctus*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 70.

This species is very similar in general appearance to *australis*, but differs in several characters. The head is very broad, much broader than in *australis*, the eyes are contiguous for some distance below the ocellar tubercle, the abdomen is much broader, and the general body pubescence is much brighter, almost a golden colour. The wings are almost hyaline, yellowish at the base and along the fore margin for about two-thirds the length, in contrast to the dark smoky wings of *australis*.

Of this species I have only seen a single specimen, a male, from Medlow, N. S. Wales, January.

SYSTOECHUS RUBIDUS, n. sp.

♀. Head greyish, the frons somewhat darker; occiput moderately convex, clothed with appressed white scales and dense, short, pale brownish, almost whitish hairs, which appear still paler below; frons at the vertex, about one and one-half times the width of the ocellar tubercle, clothed with dense, appressed, golden scales and erect pale hairs; median furrow distinct; face densely covered with appressed, clear white hairs, which do not appear to extend the full length of the cheeks to the white beard below; oral opening small, though rather broad compared with its length, its borders very pale yellowish; ocellar tubercle rather large, very prominent, with some erect, long, pale hairs. Antennae shorter than the head, the two basal segments brownish, the first with long pale hairs; the third segment is of unusual shape, being longer than the first two segments together, broadly flattened from side to side, so that it is somewhat broadly hastate, and provided with a small but distinct style placed a little below the extreme apex. Proboscis black, brownish at base and beneath, about three times the length of the oral opening; palpi very short, hidden.

Thorax grey-black, clearer grey in front and on the sides, clothed with appressed, pale golden scales, and dense, short, very pale yellowish hairs which, viewed from the front, appear whitish; bristles inconspicuous, pale golden; scutellum tinged reddish, with similar tomentum and pale, thin, bristles; pleurae and breast grey, white haired; squamae pale yellowish with a white fringe; halteres with yellow knobs.

Abdomen short and oval, pale reddish, the basal segment and portions of segments two, three, and four, darker, the apical segments paler, clothed with pale yellowish hairs and appressed pale golden scales, the bristles much darker; venter yellowish with appressed white pile and numerous pale bristly hairs.

Legs yellowish, coxae and apical tarsi dark, clothed with white scales, the coxae and femora beneath with long white hairs; middle femora with about two, hind femora with about six long spines below; pulvilli pale; claws black.

Wings subhyaline, faintly yellowish at base and in cell Sc, clearer at apex and along hind margin.

Holotype ♂, Chinchilla, Q'land, November, 1926, A. P. Dodd; length of body, 3.5 mm.; of wing, 3 mm. Paratype ♀, Moonie River, N. S. Wales, 2nd November, A. P. Dodd. In the paratype the abdomen is somewhat conical, more yellowish-brown than red, the basal segments darker medianly.

Both the holotype and paratype are not in the best condition for description, but the shape of the third antennal segment is so outstanding among the species of the genus as to warrant a description.

The holotype is in the Queensland Museum.

SYSTOECHUS ALBOHIRTUS, n. sp.

♂. Head greyish, silver grey on occiput and chin; occiput slightly swollen, clothed with dense, long, white hairs, which become much thinner on the chin to form a sparse, short, white beard; ocellar tubercle black, with some erect whitish hairs; eyes almost contiguous below the ocellar tubercle for a short distance, the width of the frons at the narrowest point being by no means as broad as the fore ocellus; upper and inner facets little enlarged; frontal triangle of moderate size, clothed with dense, appressed, white scales, face rather narrow, little projecting, clothed with dense white hairs, which do not appear to cover the basal portion of the cheeks; mouth opening rather narrow, with pale yellow borders. Antennae about as long as the head, the two basal segments reddish, the third darker, almost black; first segment with long white hairs, longer below; second about half the length of the first; third a little longer than the first two segments together, somewhat elongate oval in shape, broadest medianly, the style spine-like, very minute but distinct, placed a little below the extreme apex. Proboscis long, slender, about three times the length of the oral opening; palpi short, slender, yellowish.

Thorax blackish, grey laterally, clothed with appressed, white scales and dense, white hairs; bristles whitish, not conspicuous; pleurae and breast greyish, densely white haired; scutellum grey, with similar tomentum, the bristles longer and more easily seen; squamae whitish with a white fringe; halteres with pale yellow knobs.

Abdomen somewhat greyish, much longer than broad, clothed with appressed white scales and dense, white hairs, longest laterally; bristles whitish, not outstanding among the dense white hairs; venter white haired.

Legs yellowish, coxae, fore femora at base, and apical tarsi darker, the whole with white scales, the coxae and femora below with long white hairs; hind femora only with long spines below (spines beneath middle femora possibly broken off); pulvilli pale; claws black.

Wings hyaline; apical cross-vein of cell mc not equal to vein r-m, so that mc is somewhat acute at end.

♀. Similar to male, but frons very broad, clothed with dense white scales and some erect white hairs.

Holotype ♂, labelled South Australia only; length of body, 9 mm.; of wing, 8.5 mm. Allotype ♀, labelled South Australia only; length of body, 9.5 mm.; of wing, 8 mm.

No paratypes are known, the holotype and allotype being from the collection of the South Australian Museum. The species is outstanding on account of the unicolorous and dense, clear white pubescence, and the completely hyaline wings.

The holotype and allotype are in South Australian Museum.

SYSTOECHUS PALLIDUS, n. sp.

♂. Head mainly greyish, the face and frons darker; occiput moderately convex, clothed with dense, short, equal, pale golden hairs, somewhat paler below; ocellar tubercle large, black, with some bristly, blackish hairs; eyes contiguous imme-

diately below ocellar tubercle for a short distance, their upper facets little enlarged; frontal triangle of moderate size, clothed with appressed, golden scales; median furrow distinct; face becoming grey dusted towards the chin, covered with long, black, bristly hairs, with a pale golden moustache, which does not extend to the sparse, white beard below; mouth opening somewhat short and broad, its borders pale yellowish. Antennae almost entirely black, not as long as head, the first segment with long black hairs, the third longer than the first and second together, the basal half broadened and somewhat oval, the apical half, linear, provided with small spine-like style, placed a little below the extreme apex. Proboscis black, rather stout, about three times the length of the oral opening, its labella rather enlarged; palpi black, slender, about one-third the length of the proboscis.

Thorax black, grey on the sides, clothed with appressed pale golden scales and dense, short, equal, pale yellowish hairs, the whole viewed from the front with a somewhat whitish sheen; pleurae and breast grey, with dense white hairs, the mesopleural tuft stained yellowish above; bristles weak and small, not conspicuous; scutellum dark brownish, with similar hairs and scales, and with numerous long, pale, weak, and stronger, darker intermixed bristles; squamae pale with a pale fringe, which sometimes appears whitish; halteres pale brown with yellow knobs.

Abdomen somewhat obconical, much longer than broad, dark brown with small lateral pale reddish areas to each segment, the areas decreasing in size apically; dorsum clothed with hairs and appressed scales, similar to those on the thorax, the hairs rather more dull, and paler laterally and towards the apex, and the scales longer and paler apically; bristles numerous, long, blackish; venter grey, densely white haired.

Legs with coxae grey, the remainder, except for the darker apical tibiae, pale yellow, clothed with white scales, the coxae and femora below with long white hairs; middle femora with three short, hind femora with five to seven long spines beneath; pulvilli pale.

Wings yellow at base and along fore margin to the apex of cell Sc, the remainder smoky, clearing to hind margin and apex, so that both these portions of the wing are almost hyaline; veins heavily marked; venation normal; cell mc sharply acute and very broad basally.

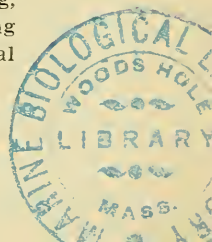
Holotype ♂, Brisbane, Q'land, 15th August, 1927, F. Roberts; length of body, 8 mm.; of wing, 6.5 mm. Paratypes: 6 ♂, Brisbane, August to October, F. Roberts; 2 ♀, Brisbane, August, J. Mann.

Among the series of this species is a female (Blackheath, 1st February, 1926, I. M. Mackerras) which is in too bad a condition to be made an allotype. As far as an examination will allow, the broad frons shows dark golden scales and long black hairs, the specimen being otherwise similar to the male.

The holotype is in the Queensland Museum.

SYSTOECHUS FLAVOVILLOSUS, n. sp.

♂. Head grey; occiput moderately convex, clothed with dense, bright yellow hairs, which become much paler below; ocellar tubercle black, with some long, black, bristly hairs; eyes contiguous for a short distance below the ocellar tubercle, their upper facets little enlarged; frontal triangle of moderate size, clothed with appressed, golden scales; median groove very distinct; face barely projecting, clothed with black bristly hairs, the moustache thin and very pale golden, extending almost the full length of the cheeks to the sparse, whitish beard below; oral



opening short and rather narrow, its borders pale. Antennae entirely black, the first segment with long black hairs, the third longer than the first two segments together, its basal half broadening and somewhat ovate, thence gradually tapering to a not very slender apex; style minute, spine-like, placed somewhat subapically. Proboscis black, rather short and not so very slender, about two and one-half times the length of the oral opening; palpi slender, blackish, about one-third the length of the proboscis.

Thorax black, somewhat greyish laterally, clothed with appressed, shining golden scales and short, dense and equal, bright yellow hairs; pleurae and breast greyish, much paler haired; bristles thin, not conspicuous; scutellum black, clothed like the thorax, but with more conspicuous pale golden bristles; squamae pale with a very pale yellow fringe; halteres pale brownish with yellow knobs.

Abdomen rather short and rotund, black, at most tinged reddish on the extreme lateral margins of the basal segments; dorsum clothed with appressed golden scales and dense bright yellow hairs; bristles very pale golden, very long and forming complete rows on the hind borders of the segments; venter grey, with very pale shining, yellow appressed pile and longer, pale bristly hairs.

Legs mainly yellow, the coxae grey, apical tarsi of fore and middle legs, all tarsi and apex of tibiae of hind legs brownish, the femora and tibiae clothed with pale golden scales, which appear to be somewhat whitish on the femora beneath; coxae and femora below, with long pale hairs; hind femora with about five long spines below; middle femora without any apparent spines below; pulvilli pale.

Wings subhyaline, yellowish at base and along the fore margin to the apex of the cell Sc; venation normal; R_{2+3} moderately curved at apex to meet the costa at an obtuse angle.

Holotype ♂, Meringa, Nth. Q'land, 17th November, 1926, Goldfinch; length of body, 7.5 mm.; of wing, 7 mm.

In the female the frons is rather narrow at the vertex of the head, being about one and one-half times the width of the ocellar tubercle, clothed with golden scales and erect black bristly hairs; face with silver-white hairs; pleurae and breast white haired, the mesopleural tuft pale yellow; abdomen black, the segments with small pale reddish-brown lateral areas, larger on the basal segments and decreasing in size apically.

Allotype ♀, Meringa, 17th November, 1926, Goldfinch. Paratypes, 2 ♀, same data, in the collection of Dr. I. M. Mackerras.

The difference in the ground colour of the abdomen in the male and female is rather peculiar. In the male, the abdomen is almost wholly black, the basal segments tinged pale reddish laterally. In the female the colour is similar to that of *pallidus*, the pale reddish lateral areas being very distinct. It is possible that the condition of the abdomen as seen in the holotype is a variation, the usual colour being identical with that of the female.

The holotype and allotype are in the Macleay Museum.

SYSTOECHUS CINCTIVENTRIS, n. sp.

♂. Head mainly greyish; occiput little convex, clothed with dense, equal, pale yellow hairs, which become more whitish below; ocellar tubercle black, with long pale hairs; eyes contiguous for a short distance below the ocellar tubercle, their upper facets enlarged; frontal triangle small, clothed with appressed, pale golden yellow tomentum, the median groove very distinct; face clothed with short, dense white hairs, stained yellowish below antennae, the moustache white, not

extending to the white beard below. Antennae black, as long as the head, the first segment with long, very pale yellowish hairs, the third about one and one-half times the length of the first two segments together, of similar shape to that of *pallidus*; the style spine-like, and placed somewhat subapically. Proboscis black, slender, about three times the length of the oral opening; palpi slender, one-fourth the length of the proboscis.

Thorax dark brownish-black, greyish laterally, clothed with appressed golden scales and dense, short and equal yellowish hairs which, when viewed from the front, appear paler laterally; pleurae and breast grey, white haired, the mesopleural tuft faintly yellow above; scutellum black, with golden scales and thin, pale golden bristles; squamae pale with a pale golden fringe; halteres with pale yellow knobs.

Abdomen somewhat obconical, black, with yellow lateral areas to each of the segments, those on the sides of the second and third segments very large, the black colour thus appearing as a broad dorsal stripe, continued from base to apex, and denticulated at the borders of the segments, this denticulation being particularly noticeable on the second, third and fourth segments; dorsum clothed with golden scales and dense pale yellowish hairs; bristles very weak, pale, forming complete rows on the hind borders of the segments; venter grey, clothed with pale yellowish tomentum and pale bristly hairs.

Legs mainly pale yellow, coxae grey, apical tarsi of fore and middle legs and all hind legs darker, clothed with white scales, the coxae and femora below with long white hairs; hind femora with about six long spines below; pulvilli pale.

Wings yellowish at base and along fore margin to apex of cell Sc, the remainder of the wing pale smoky, clearer at apex and along the hind margin; venation normal.

Holotype ♂, Chinchilla, Q'land, 14th November, B. Smith; length of body, 8 mm.; of wing, 7.5 mm.

♀. Frons broad with dark golden scales and black hairs; wings clearer than in male.

Allotype ♀, Brisbane, Q'land, 8th August, 1927, J. Mann. Paratypes: 6 ♂, Chinchilla, Q'land, 14th November, 1926, B. Smith; 1 ♂, Chinchilla, January, 1928, A. P. Dodd; 1 ♂, Goondiwindi, January, 1928, F. Roberts.

This species is very similar to *pallidus*, but may be distinguished by the brighter pubescence, the white hairs of the face, the larger pale yellowish lateral areas of the abdomen, and by the clearer infuscation of the wing.

The holotype and allotype are in the Queensland Museum.

SYSTOECHUS LEUCOPYGUS v. d. Wulp.

Systoechus leucopygus, v. d. Wulp. *Notes Leyden Mus.*, vii, 1883, 86; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 70.

Nigricans, flavo-hirtus, mento, pectore anoque albo-hirtus; antennis rostroque nigris; pedibus luteis; alis cinereis, basi et costa testaceis; male, long 10½ mm.

General appearance like a European species of *Bombylius*. Blackish, covered with a very dense yellow pilosity, which becomes fulvous on the collar and has silvery-white reflections on the last abdominal segment; front small, trigonal; face short, both with a sericeous pale yellow pile; beard and hairs on the breast and pleurae, white. Antennae black; the first segment cylindrical, the second short, the third a little longer than the previous joints together, subulate. Rostrum black, as long as the thorax. Legs yellow, with small bristles, those on the front

legs very short. Halteres reddish-yellow. Wings greyish, at the base and along the costa as far as two-thirds of its length with a brownish white tinge.

A male from Adelaide (Felder).

This species has not been recognized among the material examined.

Genus SISYROMYIA White.

Sisyromyia, White, *Proc. Roy. Soc. Tasm.*, 1916, 197; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 70; 1923, 84.

Genotype, *Bombylius auratus*, Walker, by original designation.

Head very broad, about equal in breadth to the thorax; occiput somewhat flattened above, little convex below; eyes contiguous or almost so in the male, widely separated in the female; frontal triangle rather large; face very broad, little projecting between the eyes, slightly broadening to the chin; cheeks comparatively broad. Antennae approximated at base, the first segment slender and much longer than the second, the third as long as or much longer than the first two together, somewhat varying in form, usually rather linear with a rounded apex with a minute apical style, and some long bristly hairs at the apex. Proboscis long, frequently thickened, with the labella sometimes much expanded; palpi slender, usually small.

Thorax broad, slightly arched, with the postalar bristles very weak; scutellum broad and semicircular, with very long bristles or bristly hairs.

Abdomen curved, usually short and very broad, equal in breadth to or broader than the thorax, with very long bristly hairs.

Legs slender, the hind legs much longer, hind femora with two rows of strong spines beneath, one of the rows very short; spines on fore tibiae very short; femora with long hairs below.

Wings with well developed lobes and alulae; R_{2+3} curved apically, at most to meet the costa at a right angle; cells R_3 and R_4 never divided; cell R_5 open; vein r-m placed well before the middle of cell mc, so that cells R and M are of an approximately equal length; cell Cu open.

Range.—Australia.

This genus is confined to Australia, and as far as is known contains six species, none of which is new. Nothing is known of their habits or life histories.

Distribution.—Very few specimens of the various species have been collected, so the records of the habitat, etc., are rather scanty. New South Wales possesses three species, *decorata*, *albavitta* and *aurata*. The former, as far as the records show, is confined to that State, though it was originally described from Western Australia. The other two species are more widely distributed, *albavitta* occurring in Western Australia and Queensland and *aurata* in Western Australia and Tasmania. Of the remaining species, *limbatus* is known from South and Western Australia, *brevirostris* from Tasmania, and *tetratricha* from Western Australia, respectively.

Key to the Species of *Sisyromyia*.

- | | |
|---|---------------------------|
| 1. Wings spotted | <i>limbata</i> Bigot |
| Wings not spotted | 2 |
| 2. Thorax encircled with white hairs | <i>decorata</i> Walker |
| Thorax without such white hairs | 3 |
| 3. Apex of abdomen with a thick tuft of black pubescence on each side | <i>tetratricha</i> Walker |
| Apex of abdomen without such tufts | 4 |

- | | |
|--|------------------------------|
| 4. Abdomen with a yellow or white central stripe | 5 |
| Abdomen without a central stripe | <i>brevirostris</i> Macquart |
| 5. Pubescence golden yellow | <i>aurata</i> Walker |
| Pubescence reddish | <i>albavitta</i> Macquart |

SISYROMYIA LIMBATA (Bigot).

Sparnopolius limbatus, Bigot, *Ann. Soc. ent. France* (7), lxi, 1892, 369.—

Dischistus limbatus, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 69.

♂. Head mainly grey, frons and upper portion of face rather darker; occiput dark brown above, clothed with dense, pale brown and some intermixed, longer black hairs, the hairs becoming paler below; eyes almost contiguous for a short distance below the ocellar tubercle; ocellar tubercle black, with some long black hairs; frons between the eyes exceedingly narrow, at its narrowest point being no wider than the fore ocellus; frontal triangle rather broad, clothed with appressed, pale shining pile; median groove distinct; face clothed with long, black, bristly and pale brown hairs, the latter becoming white on the cheeks and chin, and the former more or less encircling the pale brown hairs above. Antennae with the first two segments greyish, the third black; first segment with long black hairs, third longer by one-half than the first two together, constricted at base, somewhat linear in shape, the apex with five or six long black bristly hairs; style very minute. Proboscis rather short and slender, the labella not much enlarged; palpi very small, hidden.

Thorax dark brown, greyish laterally, clothed with short, dense, brownish, and some intermixed black hairs, the latter more apparent posteriorly; on each side there is a stripe of short dense white hairs, which extends for the full length above the wing insertions; pleurae and breast grey, white haired, mesopleural tuft brownish above; scutellum dark brown, with a basal band of appressed, silver-white hairs, which is contiguous on either side with the lateral stripes of the thorax; bristles brownish and black; squamae pale brown with a whitish fringe; halteres with yellow-brown knobs.

Abdomen short and broad, not as long as its greatest width, and pointed apically; dark brown, clothed with pale brown hairs, very long and dense on the sides of the first and second segments; remaining segments with more apparent appressed, golden brown scales, and laterally with sparse, clear white tomentum, the whole bearing long thin black bristly hairs; from the second segment to the extreme apex, there extends a stripe of silver white scales; venter white haired, longer and stained brownish towards the apex.

Legs somewhat yellowish, with grey coxae, and dark apical tarsi; femora with white scales, somewhat golden above, and short white and longer black hairs below; pulvilli pale.

Wings yellow at base and along fore margin, the rest smoky, rather clearer at the apex and along the hind margin, containing six suffused spots, placed on the cross-veins between M and M_1 , mc and M_1 , on im , where it joins M_{3+4} , near the origin of R_4 with R_{4+5} , and more faintly on the curves of R_{2+3} and R_4 ; R_{2+3} little curved, meeting the costa at an obtuse angle.

♀. Frons extremely broad, clothed with long black bristly hairs, and some appressed pale scales.

Length of body, 8 mm.; of wing, 7.2 mm.

Hab.—South Australia: Port Augusta (August); Western Australia: Eradu.

The description is taken from a solitary pair in the South Australian Museum. Neither the male nor female is in the best condition, and the colour of the hairs

of the face in both sexes is somewhat doubtful. In the male there are traces of white hairs on the posterior part of the thorax. However, the species may easily be recognized by the encircling white stripe of the thorax, the white stripe of the abdomen in conjunction with the spotted wings.

Hardy was uncertain of the position of this species, and placed it in the genus *Dischistus*.

SISYROMYIA ALBAVITTA (Macquart).

Bombylius albavitta, Macquart, *Dipt. Exot.*, suppl. 4, 1850, 117; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 71; 1923, 85.

♂. Head mainly grey, frons and upper part of face darker; occiput clothed with dense, short, reddish hairs above, much paler and rather shorter below; eyes separated by a very narrow streak, not broader than the fore ocellus; ocellar tubercle black with some long, black, bristly hairs; frontal triangle rather large, clothed with dense, appressed golden scales; face with golden pile and long, black, bristly hairs, the latter placed mainly above and close to the inner eye margins and immediately beneath the antennae. Antennae mainly black, the first two segments somewhat greyish; first segment with long black hairs, third constricted at base, broader medianly, longer than the first two segments together, with a minute apical style, and some long, black, bristly subapical hairs. Proboscis entirely black, rather stout, with expanded labella, about twice the length of the oral opening; palpi very slender, pale brown, about one-fourth, or little less, the length of the proboscis.

Thorax black, clothed with shining appressed golden scales, and dense, short, equal, reddish hairs; pleurae and breast paler haired, the mesopleural tuft reddish; scutellum dark, with similar golden scales, longer reddish hairs, and very thin, reddish bristles or bristly hairs; squamae pale brown with a pale reddish fringe; halteres with reddish-brown knobs.

Abdomen curved, short and broad, usually hardly as long as its greatest width, blackish, clothed with appressed golden scales and long reddish hairs, very dense apically and laterally; bristles very long, black, with some paler bristles intermixed; from the second segment to the apex there runs a rather broad median stripe of shining whitish scales; venter densely pale haired, reddish apically.

Legs reddish, coxae grey, clothed with reddish scales; femora below and coxae with long pale and some black hairs; hind femora with long strong spines below; middle femora with few spines below.

Wings somewhat smoky, yellowish at base and along fore margin for about two-thirds the length; R_{2+3} curved apically so as to meet the costa at an obtuse angle; cell mc very long and rather narrow.

♀. Frons very broad, clothed with golden scales and long black bristly hairs.

Length of body, 10-11.5 mm.; of wing, 11.5-14 mm.

Hab.—Queensland: Mt. Tambourine (January); N. S. Wales: Mt. Kosciusko, Sydney (February); W. Australia: King George's Sound.

This species was regarded by Hardy as a form of *aurata*. The species appears to me to be distinct, the differences lying in the palpi, the curvature of the vein R_{2+3} and of course, in the colour of the pubescence. In *albavitta*, the palpi are rather shorter and more slender, not being swollen apically as in *aurata*; in *aurata* R_{2+3} is always so curved apically as to meet the costa at a right angle, whereas in *albavitta*, the curvature is much less, the vein meeting the costa at an obtuse angle.

I have seen in the collection of the Queensland Museum a large specimen very similar in colouration to *albavitta*. In this specimen the proboscis is of an outstanding length, being about as long as the fly itself. Its habitat is given as King George's Sound, W. Australia, and in all probability it is a distinct species.

SISYROMYIA DECORATA (Walker).

Bombylius decoratus, Walker, *List Dipt. Brit. Mus.*, ii, 1849, 291.—*Sisyromyia decoratus*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 71.—*Bombylius scutellaris*, Thomson, *Eug. Resa*, Dipt., 1868, 488; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 71.

♀. Head grey, the face with a narrow brown horizontal stripe immediately below antennae, and including their base; occiput clothed with pale reddish hairs above and on each side of the vertex, much paler laterally, almost whitish below; frons very broad at vertex, with erect, black, bristly hairs, on each side and above, and some appressed golden scales; face clothed with short pale golden hairs, with erect, black, bristly hairs encircling, and placed near the inner eye margins and immediately below the antennae; cheeks and chin white haired. Antennae with the basal segments greyish, the third black; third segment constricted at base, somewhat linear in shape, with a minute apical style, and some long, black, bristly, apical hairs. Proboscis black, slender, the labella little enlarged, a little more than twice the length of the oral opening; palpi very small and slender, apex with longer hairs.

Thorax grey, with two broad dark brown admedian stripes and a narrow median stripe, so that the thorax appears dark brown with front and sides grey, and two narrow admedian grey stripes, the dark brown portions clothed with appressed reddish golden scales and short, dense, reddish hairs, the grey, with white scales and short, white hairs, the thorax thus appearing with reddish hairs, with two lateral and two admedian white stripes; pleurae and breast grey, white haired; mesopleural tuft reddish above; scutellum blackish, with a basal stripe of white hairs, contiguous with the lateral white stripes of the thorax, otherwise clothed with reddish hairs and provided with long, thin, black, bristly hairs; squamae with a sparse pale fringe; halteres with somewhat yellowish knobs.

Abdomen short and very broad, about as long as its greatest width, the basal segment with short, erect, white hairs; remainder with appressed dark golden scales, white scales laterally, and reddish hairs, the latter forming reddish tufts on the sides, intermixed with longer, black, bristly hairs, and some pale, almost whitish hairs; apex with two long tufts of reddish and intermixed black hairs on each side; bristles very long, thin, black; from base to apex there runs a median stripe of silver white scales; venter with pale appressed hairs, longer and reddish and intermixed with black, bristly hairs laterally.

Legs somewhat brownish, coxae grey, hind legs darker, almost reddish; femora appear clothed with pale golden scales, which are intermixed with white scales, more so beneath; femora beneath with long white and longer black hairs.

Wings with costal cell yellow, dark brown from base to apex, and for nearly half the breadth, the colour being somewhat suffused apically; inner margin of coloured area very irregular, occupying all cell M, one-half of cell R_5 , thence across to the bifurcation of R_4 and R_5 , leaving a large clear area in cell R_3 ; R_{2+3} curved as to meet costa at an obtuse angle; R_4 with an appendix.

Length of body 9 mm.; of wing, 10 mm.

Hab.—N. S. Wales: Medlow Bath and Sydney (October).

The description is taken from a solitary female. The thorax is rather rubbed and the four white stripes are only traceable.

SISYROMYIA AURATA (Walker).

Bombylius auratus, Walker, *List Dipt. Brit. Mus.*, ii, 1849, 289.—*Sisyromyia auratus*, White, *Proc. Roy. Soc. Tasm.*, 1916, 198; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 71; 1923, 85.—*Bombylius rutilus*, Walker, *List Dipt. Brit. Mus.*, 1849, 289.—*Sisyromyia rutilus*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 72.—*Bombylius crassirostris*, Macquart, *Dipt. Exot.*, suppl. 4, 1850, 117.—*Bombylius loewii*, Jaennicke, *Abh. Senck. Nat. Ges.*, vi, 1867, 345.—*Bombylius pycnorhynchus*, Thomson, *Eug. Resa. Dipt.*, 1868, 486; *Bombylius lobalis*, Thomson, *Eug. Resa. Dipt.*, 1868, 487.

♂. Head mainly grey; occiput clothed with dense, short, golden yellow hairs, somewhat paler below; eyes separated by a narrow streak, not broader than the fore ocellus; ocellar tubercle with some long black, bristly hairs; frontal triangle rather large, clothed with dense, appressed, golden yellow scales; median groove distinct; face densely clothed with yellow hairs, paler on the cheeks and chin, with numerous long, erect, black, bristly hairs, which extend from immediately beneath the antennae along the inner eye margins for about two-thirds the length of the cheeks; mouth opening long and somewhat narrow, its borders brownish. Antennae black, the first segment with long black hairs, the third, much longer than the first and second together, strap-shaped, with a minute apical style and some long, black, bristly hairs a little below the apex. Proboscis black, rather stout, labella much enlarged; palpi rather stout, somewhat swollen apically about one-third the length of the proboscis.

Thorax black, clothed with appressed golden scales and short, dense, golden yellow hairs, with a few black hairs intermixed; pleurae and breast grey with dense pale golden yellow hairs, the mesopleural tuft somewhat darker above; scutellum brownish, darker basally, with appressed golden scales and long yellow and intermixed black, bristly hairs; squamae brownish with a pale golden yellow fringe; halteres with brownish-red knobs.

Abdomen very short and broad, usually much curved, rounded and at most as long as its greatest width; dorsum with appressed golden scales and long golden yellow hairs, longer and denser laterally, the whole with long, black, bristly hairs; extending the full length is a broad median stripe of bright yellow scales, the golden scales rather sparse on each side and more confined to the lateral portions of the segments; venter densely paler haired, somewhat darker laterally.

Legs mainly reddish-yellow or yellowish, the apical tarsi of fore and middle legs and all tarsi of hind legs dark; middle femora with about six, hind femora with ten to twelve stout bristles beneath; spines on fore tibiae rather small, well developed on posterior tibiae.

Wings somewhat smoky, with the base and the fore margin for about two-thirds its length yellow; R_{2+3} much curved at apex, so that it meets the costa at a right angle; cell mc rather long and narrow.

♀. Frons very broad, clothed with golden scales and long black, bristly hairs, otherwise similar to male.

Length of body, 9-12 mm.; of wing, 12-15.5 mm.

Hab.—N. S. Wales: Barrington Tops, and Mt. Kosciusko (February), National Park (1st March, 1926); W. Australia: Swan River (December); Tasmania: Zeehan (January).

To the synonymy erected by Hardy, I have added *Bombylius rutilus* Walk.

SISYROMYIA BREVIROSTRIS (Macquart).

Bombylius brevirostris, Macquart, *Dipt. Exot.*, suppl. 4, 1850, 119; (?) Walker, *Ins. Saund. Dipt.*, 1850, 202.—*Sisyromyia brevirostris*, White, *Proc. Roy. Soc. Tasm.*, 1916, 199; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 71; 1923, 85.—*Systoechus eulabiatus*, Bigot, *Ann. Soc. ent. France* (7), lxi, 1892, 366.

This species is not represented in the material under revision, but as White determined and described it, I am rewriting his description.

“♂. Face covered with pale yellow tomentum, front with pale golden pubescence. Proboscis black, nearly three times the length of the head, with the tip slightly inflated. Antennae black, the first joint about three times the length of the second, and bearing long yellow hairs, the third about equal in length to the first two together, of a slender strap shape, with rounded style like apex. Eyes joined. Thorax and abdomen of a dull black ground colour, which in fresh specimens is entirely covered with very long, furry, yellow pubescence, but this becomes very easily detached. Legs very slender, femora black, with pale yellow pubescence, anterior and middle tibiae red, posterior tibiae brown, the whole bearing minute bristles; tarsi black. Wings hyaline, with the fore margin brownish.

Female resembles the male, but the eyes are very widely separated, and the pubescence of the face and front paler.

This species seems to be very local, but is probably common where it occurs. The males hover in the air in the bright sunshine at a height of some five feet from the ground, but should a cold wind arise they disappear completely. It occurs during February”.

Length, ♂, 6.7 mm.; ♀, 6.5 mm.

Hab.—Bagdad, Tasmania.

White has fortunately illustrated the wing of this species, and the venation is typical of the genus. The species is peculiar in that the third antennal segment does not possess the apical bristly hairs and the abdomen the central dorsal stripe so characteristic of the other four species. It is unfortunate that the species is not represented in any collection, as it is probable that *brevirostris* belongs to the genus *Sparnopolius*, which is very closely allied to *Sisyromyia*. The venation of the two genera is identical but *Sparnopolius* may be distinguished by the differently shaped antennae, the third segment being devoid of the apical hairs, so characteristic of *Sisyromyia*, and the more or less conical abdomen.

SISYROMYIA TETRATRICHIA (Walker).

Bombylius tetratrichus, Walker, *List Dipt. Brit. Mus.*, ii, 1849, 291.—*Sisyromyia tetratrichus*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 72; 1923, 84.

There is a single specimen of this species in the collection of the Queensland Museum, a female. This specimen is in a very bad condition, but an examination shows it to be clothed mainly with yellowish hairs, the abdomen with a tuft of black hairs on each side, and the wings greyish, faintly brownish at the base and along the fore margin for about two-thirds the length.

The habitat is given as Hamel, West Australia.

SISYROMYIA PRIMOGENITA (Walker).

Bombylius primogenitus, Walker, *List Dipt. Brit. Mus.*, ii, 1849, 292.—*Sisyromyia primogenitus*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 72; 1923, 85.

Mas. Niger, pilis ferrugineis vestitus, capite pilis albis fulvis nigrisque ornato, antennis nigris, pedibus fulvis, femoribus basi nigris, tarsis piceis, alis subcinereis basi et ad costam fuscis.

Body black; head rather broad, clothed with tawny hairs behind, with black hairs on the crown, and with white hairs on the front and beneath; eyes red; mouth rather shorter than the chest; feelers black; second joint not one-third the length of the first; third joint very slightly tapering from the base to the tip, longer than the first and second; chest and breast clothed with bright ferruginous hairs; breast clothed with hoary hairs; abdomen clothed with black hairs at the tip; legs tawny and clothed with short tawny bristles; thighs towards the base and hips black, clothed with long white hairs; feet piceous towards the tips; wings pale grey, brown at the base and along the fore border to the tip, and for one-third the breadth; wing ribs and veins black, the latter black towards the tips; poisers bright yellow. Length of the body, 3 lines; of the wings, 6 lines.

Swan River.

The above species has not been recognized. White compared it with Macquart's *brevirostris*, remarking that the costa was more broadly brown and did not extend to the apex of the wing.

Genus ANASTOECHUS Osten Sacken.

Anastoechus, Osten Sacken, *Bull. Unit. States Geol. Surv.*, iii, 1877, 251.

Genotype, *Bombylius nitidulus*, F., by original designation.

Head about as broad as thorax; face not projecting between the eyes, the mouth borders, the cheeks and the eyes being almost on the same level, clothed with dense, long and erect hairs, which conceal its outlines and the basal segments of the antennae. Eyes small, separated in the male by an interval at the vertex; a distinct line separates the upper and larger facets from the smaller and lower ones. Antennae usually longer than the head, the first segment very long, the second short, the third more distinctly attenuated than in *Systoechus*, the dilatation being removed further towards the middle, the slender apical half more attenuated.

Thorax and abdomen similar to *Systoechus*.

Wings with the venation of *Systoechus*, but the cell mc is very much broader in relation to its length.

Range.—World-wide.

I have had to content myself with describing three species of this genus. In the material examined there are possibly at least five species which fall into this genus, but the material is neither sufficient in numbers nor in good enough condition for any further descriptions. They are all closely allied and somewhat difficult to separate, hence the need of more material.

Distribution.—Two species, *perspicuus* and *annexus*, appear confined to Western Australia, and one, *bifrons*, to New South Wales, though this latter species possibly occurs in Queensland also. Of the species not yet described, all are from Western Australia.

Key to the Species of *Anastoechus*.

1. Body clothed mainly with white pubescence *perspicuus*, n. sp.
 Body clothed with brown or golden pubescence 2
2. Pleurae and breast mainly white haired; pubescence bright yellow or golden, a small species *bifrons* Walker
 Pleurae and breast mainly brown haired; pubescence mainly brown or tawny, a medium-sized species *annexus*, n. sp.

ANASTOECHUS PERSPICUUS, n. sp.

♂. Head mainly dark grey; occiput, more convex laterally and below, clothed with silvery scales and dense, long, white hairs; frons very narrow between the closely approximated eyes, its width at the narrowest point hardly equal to the fore ocellus; frontal triangle covered with white pile; face clothed with dense, erect, white hairs, encircling which is a row of black hairs, which are continued along the inner eye margins to about the level of the upper mouth borders. Proboscis black, rather short, with little enlarged labella; palpi hidden. Ocellar tubercle black, with some long, black hairs. Antennae entirely black, the first segment with long black hairs, the third about as long as the first and second together, with a minute apical style.

Thorax blackish, clothed with dense white hairs, with which are intermixed many bristly, black hairs; pleurae dark grey, with similar white hairs; scutellum dark grey, with white hairs and long, whitish bristles; squamae pale brown with a long yellowish fringe; halteres with yellow knobs.

Abdomen black, somewhat oval, clothed with dense white hairs, longest and most dense laterally and apically; bristles pale, not conspicuous; venter greyish, white pollinose.

Legs mainly black, the coxae greyish, the apices of the femora narrowly reddish, and the tibiae yellowish, clothed with white scales, the femora with long white hairs beneath, the scales of the tibiae appearing golden against the yellow ground colour.

Wings brownish at the base and along the fore margin to the apex of cell Sc, the colour descending in a curve to the apex of Cu, so that a little more than the basal half is suffused with brown, the remainder being sub-hyaline.

Length of body, 7.5 mm.; of wing, 6 mm.

Holotype male, Beverley, Western Australia; paratypes, 2 males, Capel River, W. Australia, W. D. Dodd.

The holotype is in the South Australian Museum.

ANASTOECHUS BIFRONS (Walker).

Choristus bifrons, Walker, *Ins. Saund. Dipt.*, 1850, 198, Pl. v, fig. 5.—*Systoechus bifrons*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 70.

♂. Head dark grey; occiput clothed with shining yellow hairs above, becoming white to the dense beard below; frons very narrow between the eyes, at its narrowest point hardly equal in breadth to the fore ocellus; ocellar tubercle black, with some long black hairs; frontal triangle rather large, clothed with dense, erect, black hairs, which are continued along the inner eye margins almost to the chin below; face covered with dense, erect, white hairs. Proboscis rather stout, black, with enlarged labella; palpi short and slender, black. Antennae entirely black, the first segment with long black hairs, the third about as long as the first and second together, with a minute apical style.

Thorax black, covered with dense, yellow or brownish hairs, rather darker laterally; scutellum with similar hairs and long, thin, pale bristles; pleurae and breast white haired, the mesopleural tuft yellowish above; squamae dark, with a pale yellow fringe; halteres yellow.

Abdomen black, covered with long yellow hairs, densest laterally and with intermixed paler hairs apically, so that the apical segments have a whitish sheen; venter white pollinose.

Legs mainly black, the femora white scaled, the tibiae with golden scales.

Wings suffused with dark brown from the base, the colour diluting, leaving the apex broadly sub-hyaline; R_{2+3} meets the costa at right angles.

Length of body, 6.5 mm.; of wing, 6 mm.

Hab.—N. S. Wales: National Park (September).

Two males collected by A. P. Dodd at Morven, Queensland, in September, are probably the same species, but the pubescence is much lighter in colour, being very pale yellowish.

The female is unknown.

ANASTOECHUS ANNEXUS, n. sp.

♂. Head with face and frons blackish, running to grey along the cheeks to the chin; occiput clothed with long brown and intermixed whitish hairs above, and short, clear white hairs to the dense, white beard below; laterally and contiguous with the hind eye-margins are some silvery scales; frons very narrow between the closely approximated eyes, at its narrowest point hardly equal in breadth to the fore ocellus; ocellar tubercle with some long, black hairs; frontal triangle rather large, clothed with dense, long and erect black hairs, which are continued along the inner eye-margins almost to the chin; face clothed with white hairs, of an almost equal length and density to the beard below. Antennae entirely black, the first segment about three times the length of the globular second, clothed with long, black hairs, the third about as long as the first and second together, with a minute apical style. Proboscis long and slender, black; palpi very thin, and small, black.

Thorax black, covered with short, dense, tawny hairs, and appressed, shining, golden scales, the hairs viewed from above appearing paler laterally; extending from the postalar callus to just above the wing base are some whitish hairs; bristles pale brown, not conspicuous; scutellum blackish, with similar hairs and long, thin, pale bristles; pleurae clothed with brown hairs, which become whitish from beneath the wing base to the base of the fore coxa.

Abdomen black, not very broad, clothed with long tawny and some intermixed paler hairs, the latter predominant apically, so that the apical segments have a whitish sheen; bristles black, and pale brownish to whitish; venter black, with appressed white scales and long, black, bristly hairs.

Legs mainly black, the femora with golden scales above and white scales and long pale hairs below; tibiae with golden scales; pulvilli pale.

Wings with the basal half dark brown, the apical half subhyaline, the edge of the colour extending from the apex of the cell C to the apex of the vein Cu_1 , is gradually diluted, leaving the apical half of the wing somewhat smoky; R_{2+3} meets the costa at a right angle.

Length of body, 10.5 mm.; of wing, 10 mm.

Holotype male, Eradu, W. Australia, 8th September, 1926, E. W. Ferguson. Paratypes, 2 males, with similar data. There are also 4 males from Merredin, W. Australia, in the collection of L. J. Newman.

The holotype is in the collection of the Macleay Museum.

Genus BOMBYLIUS Linnaeus.

Bombylius, Linnaeus, *Syst. Nat.*, Edit. x, 1758, 606; White, *Proc. Roy. Soc. Tasm.*, 1916, 192; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 72; 1923, 84.

Genotype, *Bombylius major* Linn., by designation of Latreille.

Head small, but not as broad as thorax, semicircular in shape and closely applied to the thorax; occiput slightly convex above, more or less concave below, eyes usually contiguous for varying distance in the male, wide apart in the female.

Frons much reduced by the contiguous eyes in the male, very broad in the female, the median groove usually distinctly apparent; face generally prominent between the eyes, with dense, short pubescence and with a well marked facial groove. Ocelli distinct, placed on a large, rounded tubercle. Proboscis long, usually rather slender, with small labella; palpi slender and short. Antennae usually longer than head and placed well above the middle of its height; first segment much longer than the second, the third longer than the first and second together, slender, of varying shapes, usually constricted at base, then somewhat attenuated; style usually terminal, and very distinct, and sometimes possessed of a few bristly hairs.

Thorax oval and short, arched, with dense furry pubescence and long intermixed bristly hairs; notopleural bristles usually strong and well developed, though somewhat short; scutellum broad, semicircular in shape, clothed like the thorax, the bristles longer and more conspicuous; squamae not so well developed, with a hairy fringe of varying density; halteres elongate and slender.

Abdomen rounded or oval, short and usually very broad, composed of seven visible segments, and clothed with dense, furry pubescence and long bristly hairs, usually arranged in rows on the posterior borders of the segments.

Legs slender, the hind legs elongate; tibiae with distinct rows of bristles and a circlet of terminal spines or spurs; femora usually with strong spines below, few on the fore femora and numerous on the hind femora; pulvilli distinct; empodium minute.

Wings with well developed lobe and alula; Sc and R_1 contiguous to near the apex of Sc; R_{2+3} usually curved, the curve never large, or the vein recurrent; cell R_5 closed well before the wing margin; r-m placed at or beyond the middle of the cell mc, so that the cell R is always longer than the cell M; cell Cu always open; cells R_3 and R_4 never with interradiial veins.

Range.—World-wide.

G. H. Hardy (1921) catalogued eleven species as belonging to the genus, six of which he determined, three being placed as synonyms, the remaining five not being recognized in the material under examination. The material before me is fortunately greater in quantity, and I have been able to separate seventeen distinct species, six of which are regarded as new, and three in too damaged a condition to describe. Of the old descriptions I have been unable to place three, viz., *nanus*, *albicinctus* and *consobrinus*.

The species of *Bombylius* constitute some of the most beautiful of our Diptera with their multicoloured, shining scales, soft, coloured hairs and pictured wings. The adults are flower frequenters and are most plentiful in spring and early summer, though some species are on the wing as late as February and March. Of their life histories nothing is known, though their larval hosts are probably as in other countries, *Hymenoptera*, chiefly bees.

Distribution.—Only one species, *viduus*, appears confined to Tasmania, the other two species known from there, *tenuicornis* and *chrysendetus*, extending to New South Wales and Queensland respectively. The only records of *pulchellus* and *proprius* are from New South Wales, whilst *succandidus*, *bellus*, *dulcis*, *aureolatus* and *pictipennis* occur in Queensland also; *australianus* ranges from Victoria to Queensland; *hilaris* is the only species of which I have any record from Western

Australia, its eastern and northern limit being New South Wales; both *rubriventris* and *tenuirostris* are apparently confined to Queensland.

Key to the Species of Bombylius.

1. Abdomen yellow or reddish with a median, black, denticulated stripe *rubriventris* Bigot
Abdomen not yellow or reddish 2
2. Wings hyaline and glistening, at most tinged brown at the base and along the fore margin *succandidus*, n. sp.
Wings subhyaline or smoky with the base and fore margin brown, or hyaline with about one-half their depth brown 3
3. Thorax with whitish or yellowish lateral stripes 4
Thorax without such stripes 7
4. Abdomen with a central stripe of white scales *aureolatus* Walker
Abdomen devoid of such a stripe 5
5. Wings subhyaline or smoky, the colour gradually diluting; abdomen without white scales *australianus* Bigot
Wings divided into definite brown and hyaline halves; abdomen with white scales 6
6. Pleurae and breast of male white haired; abdomen with lateral tufts of black and reddish hairs; the brown of the wings with at least three hyaline spots *pictipennis* Macquart
Pleurae and breast of male red haired; abdomen without black lateral tufts; the brown of the wings with a single, definite, hyaline spot *hilaris* Walker
7. Abdomen with a central stripe of scales 8
Abdomen without a central stripe of scales 9
8. Pubescence pale *tenuirostris*, n. sp.
Pubescence reddish *pulchellus*, n. sp.
9. Abdomen with a basal band of white hairs and some white scales and hairs apically 10
Abdomen with yellowish or brownish hairs only 11
10. Wings dark brown at base and along fore margin; basal two-thirds of cell Cu coloured *dulcis*, n. sp.
Wings light brown at base and along fore margin; cell Cu almost clear *bellus*, n. sp.
11. Pubescence bright yellow or golden 12
Pubescence tawny or brownish 13
12. Wings deep brown at the base and along the fore margin, the brown area distinctly marked off from the remainder of the wing *proprius*, n. sp.
Wings light brown at the base and along the fore margin, there being no such demarcation of the brown area *chrysendetus* White
13. Face very broad, about the width of two eyes *viduus* Walker
Face not so broad, about the width of one eye *tenuicornis* Macquart

BOMBYLIUS PROPRIUS, n. sp.

♂. Head mainly dark grey; occiput somewhat darker above, clothed with short, dense, reddish hairs, which become longer, more sparse, and whitish on the chin; eyes contiguous from immediately below the ocellar tubercle for about one-half the length of the frons, their upper facets distinctly enlarged; frontal triangle rather small, with a not very distinct median groove; face clothed with numerous, erect, black bristly hairs and some shorter, golden hairs which are more or less confined to the region of the mouth borders; ocellar tubercle black, with some long, black, bristly hairs. Proboscis black, slender and rather short; palpi small, black. Antennae entirely black, the first segment with long black hairs, the second about one-half the length of the first, with short, sparse, black hairs, the third longer than the first and second together, slightly broadening medianly, thence gradually tapering to the apex; style small, slender.

Thorax black, clothed with dense, short and equal, reddish hairs, with some intermixed red and pale golden bristly hairs, the whole seen from the front with

a golden tint; scutellum black, clothed with reddish hairs and bearing long black and pale yellow bristles; pleurae and breast dark grey; mesopleural tuft reddish with some black hairs intermixed, the hairs of the pleurae and breast much paler; squamae dark, with a short, pale reddish fringe; halteres black knobbed.

Abdomen broad and short, black, as broad as the thorax and about as long as broad, clothed with dense, pale golden or yellowish scales, and on the sides with dense, long, reddish hairs, somewhat paler apically, these reddish hairs being very conspicuous on the basal segment; bristles long and black, with a few intermixed pale golden; venter blackish, clothed with yellow appressed hairs, reddish laterally.

Legs pale yellowish-brown, the coxae dark grey, densely clothed with pale golden scales, the femora with long black hairs below; spines conspicuous on hind femora below, also present on middle femora, but not so apparent.

Wings with base and fore margin to a little past the apex of R_{2+3} and for a little less than half their breadth, blackish, otherwise hyaline; inner margin of the colour rather sharply defined and extending from about the basal third of the axillary lobe to a little beyond the apex of R_{2+3} ; r-m placed a little beyond the middle of cell mc.

Holotype ♂, Blackheath, N.S.W., 15th Nov., 1919, G. H. Hardy.

Length of body, 5 mm.; of wing, 6 mm.

The holotype is unique and is in the Queensland Museum.

BOMBYLIUS TENUIROSTRIS, n. sp.

♂. Head mainly grey; occiput clothed above with short, dense, reddish hairs, becoming darker on each side and white on the chin below; eyes contiguous for a short distance, their upper facets enlarged but not much more so; ocellar tubercle black, bearing long black hairs; frontal triangle rather large, clothed with appressed golden scales and some short black hairs; face rather prominent, somewhat narrow, clothed with dense, silver white hairs, and without any black, bristly hairs; mouth opening with very pale borders, rather narrow. Proboscis very long and slender, the labella by no means enlarged; palpi short, black. Antennae somewhat dark greyish, the first segment with long black hairs, the second about half the length of the first, the third rather longer than the first and second together, the basal two-thirds somewhat oval, the apical third slender and linear; style prominent.

Thorax shining black, densely clothed with short, whitish and a few intermixed pale yellow hairs, and appressed golden scales; some short black hairs prominent on each side in front of the wing base and posteriorly; scutellum black, with similar scales and stronger black and some intermixed paler bristles; pleurae and breast dark grey, clothed with dark reddish hairs, the mesopleural tuft pale yellow or somewhat whitish above; squamae pale, with a conspicuous white fringe; halteres with yellowish knobs, much paler at the apices.

Abdomen black, somewhat short, obconical in shape, not very broad, not as broad as thorax and longer than its greatest width; the basal segment is clothed with dense, short, erect, white hairs which extend on each side, otherwise clothed dorsally with black scales; each segment bears a narrow band of golden scales on its posterior border; extending from the second segment to the apex there is a median stripe of similar scales; laterally the second segment bears a tuft of dense black hairs, the remaining segments white hairs, which become less dense apically; the bristles form complete rows on the hind borders of the segments, pale in colour; venter white haired.

Legs mainly black, coxae dark grey and femora pale brownish at face; the femora and tibiae appear covered with black scales, over which some white scales appear to be placed, the latter very conspicuous at the bases of the femora.

Wings subhyaline, the base and fore margin to the apex of Sc, thence directly below through r-m and cells M and R, blackish, the outline of the colour suffused.

Holotype ♂, Dunwich, Q'land, September, 1926, I. M. Mackerras.

Length of body, 6 mm.; of wing, 6.5 mm.

♀. Frons with golden scales and black bristly hairs. Thorax with two short admedian stripes, which extend posteriorly for a short distance only; pleurae and breast white haired, the white hairs extending up on the dorsum to form a small area in front of the wing base.

Allotype ♀, Dunwich, Q'land, September, 1926, I. M. Mackerras.

Length of body, 5.5 mm.; of wing, 6.5 mm.

In the female the scales of the thorax appear to form three distinct stripes, the outer ones being white tomentose anteriorly, thence extending in a curve to the postalar calli, the median stripe being somewhat elongate, triangular in shape, and is widened basally to meet the two outer stripes. In the male the scales appear confined to the median part of the thorax, but the extent and appearance of the scales depend on the condition of the specimen.

The holotype and allotype are in the Macleay Museum.

BOMBYLIUS SUCCANDIDUS, n. sp.

♂. Head mainly grey; occiput blackish above, clothed with dense, short, whitish hairs, those behind the vertex, for some distance on either side, stained pale yellowish. Eyes contiguous from immediately below the ocellar tubercle for somewhat less than half the length of the frons, their upper facets distinctly enlarged; frontal triangle with a distinct median groove and clothed with appressed, shining, yellow pile; face rather long and almost perpendicular below antennae, clothed with dense, soft, white hairs which are continued to the chin below to form a short and sparse beard; ocellar tubercle with some long pale yellow hairs; mouth opening rather short with pale yellowish borders. Proboscis black and slender; palpi hidden. Antennae about as long as head, black, the first segment with long dense white hairs, the third longer than the first and second together, linear, slightly curved apically and provided with a distinct and rather elongate style.

Thorax black, clothed with short, dense, very pale yellow or whitish hairs, and appressed shining scales, which have bronze, violet, and greenish reflections, the whole seen from above appearing almost white laterally, and from the front, the hairs of the dorsum seeming to form two short admedian whitish stripes, which in the specimen before me extend for about one-quarter the length of the thorax; pleurae and breast grey, clothed with dense white hairs; mesopleural tuft slightly yellowish above, more so beneath the wing insertions; scutellum black, clothed like the thorax and with numerous very thin, pale bristles; halteres with darkened knobs; squamae dark with a long, pale yellowish fringe.

Abdomen short, not as broad as the thorax and somewhat longer than its own greatest width; the basal segment possesses a band of dense, erect and equal, white hairs which become yellowish beneath the scutellum; the remaining segments are clothed with reflective scales, similar to those of the thorax, the violet reflections predominating; laterally the hairs are long and white, but on the

second segment they are very dense and black; venter mainly white haired, the hairs on the sides of the second and third segments being somewhat yellowish.

Legs mainly black, the fore and middle femora yellowish at base, the hind femora with basal half yellowish, clothed with white scales, the femora with long white hairs below; tarsi with short yellow hairs.

Wings clear hyaline, faintly brown at the base and along the fore margin to the apex of the vein R_1 , the colour being dilated from the base to tinge the basal half of cell R_1 .

Holotype ♂, Warialda, N. S. Wales, 30th September, 1927, A. P. Dodd.

Length of body, 5 mm.; of wing, 5.2 mm.

Paratypes: 2 ♂, Biniguy, N. S. Wales, 19th January, 1924, F. Roberts; 1 ♂, Chinchilla, Q'land, 3rd October, 1926, B. Smith.

The holotype is in the Queensland Museum.

BOMBYLIUS BELLUS, n. sp.

♂. Head mainly grey; occiput slightly inflated and somewhat darker above, clothed with dense, short, white hairs, which are continued below to form a short sparse beard. Eyes contiguous from below the ocellar tubercle to near the antennal triangle, their upper facets little enlarged; ocellar tubercle with some long black hairs; frontal triangle clothed with golden scales and some short black hairs; face somewhat darker between the upper mouth borders and antennae, clothed with dense, white and numerous black hairs, the former stained yellow immediately below the antennae and the latter more or less encircling the white hairs and extending from beneath the antennae for about half the length of the face; mouth opening not very broad, its borders pale yellow. Proboscis black, rather slender; palpi slender, about one-fourth the length of the proboscis, with some long hairs at the apex. Antennae longer than the head, black, the first segment with some long black hairs, the third longer than the first and second together, with a stout apical style, which bears one or two elongate, sub-apical, bristly hairs.

Thorax black, clothed with appressed golden scales and dense, pale yellow hairs which, viewed from above, appear somewhat whitish on the sides, the whole with numerous pale and black, bristly hairs intermixed; scutellum black, with similar pubescence and numerous pale bristles; pleurae and breast grey, white haired, the mesopleural tuft yellowish above and beneath the wing base; squamae dark, with a short, pale yellow fringe; halteres with pale yellow knobs.

Abdomen black, the basal segment somewhat greyish, rather broad, longer than broad, the first segment with dense, short, erect, white hairs, stained yellow beneath the scutellum, and continued laterally to form clear white basal tufts; the remaining segments are clothed with appressed black scales, with bands of golden scales on their posterior borders; laterally the second and third segments bear alternate tufts of black and yellowish hairs, the latter being contiguous with the transverse bands of golden scales; the fourth segment, a tuft of black hairs anteriorly, white hairs posteriorly, the remaining segments also with white hairs, which become less dense and more appressed apically, and encroach on the dorsum to varying degrees; bristles black and intermixed pale yellowish; venter white haired with long pale bristly hairs.

Legs: coxae black, anterior femora black, yellowish at base, middle and posterior femora yellow, black apically, tibiae brown, the posterior tibiae darker, the whole mainly white scaled, the femora partly golden scaled.

Wings dull hyaline, brown at base and along the fore margin to the apex of the vein Sc, the brown descending to colour the cell M.

Holotype ♂, Gundamain, National Park, N. S. Wales, 14th Feb., 1926, I. M. Mackerras. Length of body, 5 mm.; of wing, 5.5 mm.

♀. Frons broad, clothed with golden scales and black bristly hairs; mesopleural tuft almost pure white, the hairs extending to surround the prealar bristles; body pubescence much lighter than in the male.

Allotype ♀, Woodford, N. S. Wales, 14th November, 1926, I. M. Mackerras. Length of body, 6 mm.; of wing, 7.5 mm.

Paratypes: 2 ♀, G. H. Hardy, Brisbane, September, 1923; January, 1927; 1 ♂, 2 ♀, F. Roberts, Brisbane, 9th September, 1927; 1 ♀, J. Mann, Brisbane, 17th September, 1927; 1 ♂, A. J. Nicholson, Como, 2nd December, 1923.

The species varies somewhat in the colour of the legs. The fore femora are usually black with the bases yellow or reddish, but the colour may vary to yellow with the apices black; the middle femora are usually yellow with the apices black, but they sometimes possess a dark reddish tinge above.

The holotype and allotype are in the Macleay Museum.

BOMBYLIUS DULCIS, n. sp.

♂. Head mainly grey; occiput slightly convex, clothed with short, equal, and dense white hairs, continued below to form a thin white beard. Eyes contiguous for about half the length of the frons, their upper facets enlarged. Frontal triangle rather broad, bearing short, inconspicuous black hairs and some appressed golden scales; face rather prominent, clothed with dense, long, black, bristly hairs, with which are intermixed some short, whitish, or pale yellowish hairs, and some pale, golden scales; mouth opening not very long and rather narrow with pale borders; ocellar tubercle black, with some long, erect, black hairs. Proboscis about three times the length of the mouth opening, slender, palpi slender, about one-fourth the length of the proboscis, with some sparse hairs. Antennae dark greyish, not as long as the head, the first segment with some long black hairs, the second not quite half the length of the first, the third longer than the first and second together, slightly broadening for the basal third, thence gradually tapering to the apex; style distinct and rather elongate, about one-eighth the length of the third segment, with one or two short, subapical bristly hairs.

Thorax deep black, clothed with short, dense and equal pale, dull brown hairs and appressed golden scales, and with numerous black hairs intermixed, especially posteriorly and laterally; postalar bristles extremely weak, black, and rather short; scutellum black, similarly clothed, but with longer and more conspicuous bristles, much paler in colour; pleurae and breast dark grey, clothed with somewhat golden hairs, the mesopleural tuft more reddish, with some intermixed black hairs; squamae blackish with a short white fringe; halteres with yellow knobs.

Abdomen very broad and short, not as long as broad, and about as broad as the thorax; first segment with numerous erect white hairs, which extend laterally, and are yellowish beneath the scutellum; these hairs appear continued over the anterior border of the second segment, but are longer and more appressed, very thin and stained yellowish medianly; remaining segments with black scales, their posterior borders with bands of golden scales, not so conspicuous apically; laterally the second and third segments bear dense, long, black hairs, pale golden where in contact with the golden dorsal bands; fourth segment with black hairs on its anterior border only, from thence to the apex the

hairs being white, encroaching to some extent on the dorsum, especially on the sides of the fourth and fifth segments; bristles in complete rows, black; venter pale haired, with some golden and white scales and white hairs, and long intermixed pale golden and black hairs laterally.

Legs: coxae, apices of femora, and apical tarsi, blackish; otherwise brownish, clothed with golden scales, the femora beneath and at base white haired, femora also appear to possess some white scales above; middle femora with about four, and hind femora with about twelve spines beneath.

Wings dull hyaline, the base and fore margin to a little past the apex of R_1 , deep brown, the colour descending to colour all cell M, half Cu, thence across to near the apex of R_1 , its inner margin somewhat suffused.

Holotype ♂, Westwood, Q'land, October, 1926, A. P. Dodd. Length of body, 6.5 mm.; of wing, 9 mm.

♀. Upper half of frons dark, with golden scales and erect black bristly hairs; face with white hairs only; hairs of thorax appear shorter, less dense, and paler, whilst the scales appear denser and brighter; pleurae and breast white haired, the mesopleural tuft yellowish beneath the wing insertion, the white hairs extending on to the dorsum and forming a small white area anterior to the wing base; venter and legs appear mainly white scaled.

Allotype ♀. As holotype. Length of body, 7 mm.; of wing, 10 mm.

Paratypes, 1 ♂, 3 ♀, Westwood, October, A. P. Dodd; 3 ♂, 1 ♀, Eidsvold, Q'land, I. M. Mackerras. Specimens also from Goondiwindi, Q'land (November) and Gravesend, N. S. Wales (December to February).

The holotype and allotype are in the Queensland Museum.

BOMBYLIUS PULCHELLUS, n. sp.

♂. Head mainly grey; occiput darker above, clothed with dense, short, reddish hairs, which become much paler and more sparse on the chin. Eyes not contiguous at any point, their upper facets enlarged. Frons very narrow between the closely approximated eyes, at its narrowest point about equal in width to the fore ocellus; frontal triangle rather large, with a distinct median groove and some black hairs on each side and towards the antennae; face clothed with dense white hairs, stained yellowish beneath the antennae and with numerous, encircling, black, bristly hairs; mouth opening rather narrow, with pale yellow borders. Proboscis slender, black; palpi very short, black. Ocellar tubercle black, with some long black hairs. Antennae entirely black, longer than the head, the first segment with some long black hairs, the second about one-third the length of the first, the third about as long as the first and second together, the basal half somewhat oval, the apical half slender and linear; apical style distinct.

Thorax black, clothed with dense, short and equal, dull reddish hairs which, seen from the side, have a yellowish sheen; prealar bristles reddish, postalars thin, pale; pleurae and breast greyish, clothed with brownish red hairs, the mesopleural tuft darker above, but paler beneath the wing insertions; squamae dark, with a long pale fringe; halteres with blackish knobs; scutellum black, with pale golden hairs and long, pale reddish bristles.

Abdomen black, rounded, rather broad, but longer than broad, with numerous black scales; first segment with erect short, pale yellowish or whitish hairs, second, third and fourth segments with narrow bands of reddish scales on their posterior borders, and some white scales medianly, which are more or less coalescent and form a distinct, median, longitudinal stripe, much dilated apically, so that the

apical segments appear clothed with white scales with reddish scales laterally, the white scales on the second and third segments interrupted by reddish scales; laterally the hairs are black, with intermixed long, pale brownish hairs, the hairs forming long, dense tufts on the sides of the second, third and fourth segments, the black hairs being contiguous with the black scales of the dorsum, and the brownish hairs with the narrow red scaly bands; bristles rather strong, pale brownish or reddish; venter clothed with appressed and erect brownish tomentum and bristly hairs.

Legs mainly blackish, the femora with brownish tints, clothed with dull golden scales, the femora with long black hairs beneath; spines beneath middle and hind femora pale brown.

Wings deep brown at the base and along the fore margin to the apex of cell R_1 , and for about half the breadth; the inner margin of colour is very irregular, more or less straight from the base to the cell mc , then with three conspicuous indentations and two dilatations, the first extending for about two-thirds the distance of that portion of vein M , between mc and R , and the second one to the junction of R_1 and R_5 .

Holotype ♂, Woodford, N. S. Wales, 14th November, 1925, A. J. Nicholson. Length of body, 6 mm.; of wing, 5.5 mm.

Paratype ♂, Como, N. S. Wales, 8th October, 1921, G. H. Hardy.

The holotype is in the Macleay Museum.

BOMBYLIUS TENUCORNIS Macquart.

Bombylius tenuicornis, Macquart, *Dipt. Exot.*, suppl. 1, 1846, 116; White, *Proc. Roy. Soc. Tasm.*, 1916, 192; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 73 and 1923, 86.—*Bombylius matutinus*, Walker, *List Dipt. Brit. Mus.*, ii, 1849, 281; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 73.—*Bombylius fuscus*, Macquart, *Dipt. Exot.*, suppl. 4, 1850, 119; White, *Proc. Roy. Soc. Tasm.*, 1916, 193; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 72; 1923, 86.

♂. Head mainly grey; face and frons brownish; occiput little convex, covered with short, dense and equal brownish hairs, which become paler below to the sparse whitish beard, and with numerous bristly black hairs intermingled. Eyes contiguous for a very short distance below the ocellar tubercle, their upper and inner facets distinctly enlarged; frontal triangle rather large, with a well marked median groove, clothed with depressed, pale scales and some short black hairs; face much projecting between the eyes, rather narrow and almost parallel-sided, brownish but running to grey-black on the chin, clothed with short, pale golden and longer, black bristly hairs. Proboscis black, long and slender; palpi short, black, with some long hairs at their apices. Antennae entirely black, the first segment with long black hairs, the third about one and one-half times the length of the first and second together, broadening medianly to a rather blunt apex and provided with a distinct and somewhat stout style.

Thorax black-brown, clothed with dense, short and equal, brown or tawny hairs, seen from above somewhat paler laterally; the hairs near the scutellum appear pale golden in certain lights, the whole seen from the front with a very pale yellowish or whitish sheen; prealar bristles stout and brown, postalar thin and black; scutellum with similar pubescence and long, thin, black, marginal bristles; pleurae dark grey, clothed with brown and a few intermixed pale hairs; halteres with golden yellow knobs; squamae brown with a short pale fringe.

Abdomen broad and short, rather rounded, clothed with depressed pale golden scales and long, brown or tawny hairs; bristles long, thin and black; venter with intermixed depressed pale brown and erect, black, bristly hairs; the hairs on the abdomen are longest and densest on the sides and viewed from above appear somewhat paler.

Legs mainly brown, coxae and tarsi darker, clothed with brown scales, the femora with long, black hairs beneath.

Wings subhyaline or smoky, dark brownish at the base and along the fore margin for two-thirds the length, the colour descending to darken cell M, thence diluting to the apex and inner margin, leaving about half the breadth and the apex subhyaline.

The female is similar with a much wider frons.

Length of body, 5.9 mm.; of wing, 6.9-5 mm.

Hab.—New South Wales: Woodford (September), National Park (November), Como (October), Garden Is. (December); Tasmania: Hobart (November).

It is possible that *consobrinus* is also synonymous with *tenuicornis*, being described from both Australia and Tasmania. Macquart's description is very inferior and short, and it may have been taken from a small specimen of *tenuicornis* or a large specimen of *chrysendetus*.

The species I have determined as *tenuicornis* is Hardy's *fuscus*, the name *tenuicornis* being used by him for those species he considered allied to *fuscus*. At that time, however, he was not aware that certain species of *Bombylius* occurred both on the mainland and in Tasmania.

White compares *viduus*, his *palliolatus*, with this species, and remarks that *viduus* is a much more hairy insect, for, whilst *tenuicornis*, even in fresh specimens, has a bare and denuded look, *viduus* is completely covered with a thick and long furry pubescence. The chief distinction is to be found in the width of the face, that of *viduus* being almost twice the width of that of *tenuicornis*, in comparison with the width of the eyes of the two species.

BOMBYLIUS AUREOLATUS Walker.

Bombylius aureolatus, Walker *Trans. Ent. Soc. Lond.*, iv, 1857, 145; Hardy, *Proc.*

Roy. Soc. Tasm., 1921, 73; 1923, 86.

♂. Head mainly grey; occiput little convex, dark brown above, this area being clothed with reddish hairs, below which on each side is a patch of softer, whitish hairs, separated from the whitish beard below by some brownish hairs. Eyes contiguous for some distance below the ocellar tubercle, their upper facets distinctly enlarged; ocellar tubercle black, with some long, erect, black hairs; frontal triangle with some appressed golden scales; face not very prominent, rather narrow, with long black hairs, which are also present on the chin in front of the beard. Antennae entirely black, the first segment with long black hairs, the third longer than the first and second together, of a somewhat elongate oval shape, with a distinct apical style. Proboscis long and slender, black; palpi short, black.

Thorax deep brown, greyish laterally, clothed on the brown area with golden scales and dense, short, reddish brown hairs, and on the greyish area with whitish scales and dense hairs of a similar colour, which extend for the full length and meet the white, lateral patches of the occiput, in front; prealar bristles stout, reddish, postalars long, black; scutellum reddish, black basally, clothed with golden scales and margined with dense white hairs, which meet the white lateral

stripes of the thorax, the thorax and scutellum therefore appearing enclosed, except anteriorly, by a white stripe; pleurae and breast grey, reddish haired, paler below; squamae dark brown with a short golden fringe; halteres with yellow knobs.

Abdomen black, broad, but longer than its greatest width, with reddish-golden scales and long black bristles; the first segment is clothed with short, dense, erect, reddish hairs, which are of a greater length and more sparse on the remaining segments; extending from the second segment to the apex is a median dorsal stripe composed of almost contiguous spots of white scales; laterally, the first segment bears short, dense reddish hairs, the remaining segments some longer reddish and intermixed white hairs, the red hairs disappearing towards the fourth segment, and the white hairs becoming more conspicuous, so that the apical segments are mainly clothed laterally with white hairs; the venter is clothed with reddish hairs, very long and dense on the sides.

Legs: coxae grey, femora somewhat reddish or dark yellowish, tibiae darker at apex, tarsi black; the femora are mainly clothed with reddish scales, but with traces of black scales above, and long black hairs below.

Wings subhyaline, with base and fore margin to the apex of cell R_1 deep brown, the colour including half cell Cu, all cell M, thence across to the apex of R_{2+3} , including r-m.

♀. Eyes almost parallel; frons with reddish-golden scales, and long, black, bristly hairs; pleurae and breast white haired; mesopleural tuft reddish above, so that white hairs of the pleurae and the white lateral stripe of the thorax above, appear separated by a red stripe; abdomen apparently predominantly white haired laterally; femora and coxae white haired.

Length of body, 5-10 mm.; of wing, 5.5-10 mm.

Hab.—Dunwich, Q'land (September); Sydney, N. S. Wales (October).

BOMBYLIUS VIDUUS Walker.

Bombylius viduus, Walker, *Ins. Saund. Dipt.*, 1850, 199; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 73.—*Bombylius palliolatus*, White, *Proc. Roy. Soc. Tasm.*, 1916, 194; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 73; 1923, 86.

♀. Occiput moderately convex, clothed with dense, light fuscous hairs, which become paler below to form an almost white beard. Eyes broadly separated, about the width of one eye at the vertex, their upper and lower facets of an almost equal size. Frons much broadened to antennae, blackish, clothed with appressed golden scales and long, black, bristly hairs; face brownish, rather prominent, very broad, about equal to the width of both eyes together, clothed with short golden and long black, bristly hairs; mouth opening somewhat narrow with pale borders. Antennae entirely black, the first segment with long black hairs, the third elongate and slender; style apical and distinct, with one or two minute subapical bristly hairs.

Thorax dark brownish, clothed with dense, erect, brownish hairs, paler on the sides; pre- and post-alar bristles black; scutellum brownish, clothed with similar hairs, the bristles long and black; pleurae and breast pale haired, the mesopleural tuft brownish above; squamae brown, with a thin pale yellowish fringe; halteres with brownish knobs.

Abdomen broad and short, hardly longer than broad, clothed with long brownish hairs, densest laterally, and bearing long black bristles; venter pale haired at base, otherwise with brownish scales and long black bristles.

Legs: coxae and basal halves of anterior and middle femora blackish, most of posterior femora black, remainder of femora, and most of tibiae brownish; the femora appear clothed with brown scales with a few whitish scales and long hairs below, the tibiae with white scales which, against the ground colour, appear at times brownish.

Wings brownish at base and along the fore margin, the colour gradually becoming paler, leaving the wing, except for the apex and hind margin, smoky.

Length of body, 7 mm.; of wing, 7.5 mm.

Hab.—Tasmania: Hobart (October).

The description is taken from two rather badly damaged females in the collection of Mr. G. H. Hardy. White described the male only (*Proc. Roy. Soc. Tas.*, 1916) and, except for the contiguous eyes, it apparently differs in no wise from the female. The species is very similar to *tenuicornis*, but the pubescence is much lighter in colour and the face is very much broader.

BOMBYLIUS PICTIPENNIS Macquart.

Bombylius pictipennis, Macquart, *Dipt. Exot.*, suppl. 4, 1850, 118; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 74.

♂. Head mainly greyish; occiput dark brown above, clothed with short, dense, reddish hairs, followed by a silver grey area clothed with white hairs, below which the hairs become somewhat brownish to the white beard below. Eyes contiguous, their upper facets larger; frontal triangle prominent with a distinct median groove, clothed with reddish scales on each side and above, and black scales medianly and below; face prominent between the eyes, with long intermixed reddish brown and black bristly hairs, the latter more or less encircling the former which appear confined to an area near the mouth borders; ocellar tubercle large, with long black hairs. Proboscis black, slender; palpi very small. Antennae longer than the head, the first segment with numerous black and intermixed red hairs, the third about one and one-half times the length of the first two segments together, broadening medianly and with a rather blunt apex which is provided with a slender minute style.

Thorax black, greyish laterally, clothed with short, dense, equal, reddish and a few intermixed black hairs and appressed reddish scales; laterally there is a stripe of dense greyish hairs which extend from the postalar calli, above the wing insertions, to the white areas of the occiput; prealar bristles strong, reddish, postalars thin, black; scutellum black with reddish scales and hairs and long, thin, black, marginal bristles; pleurae grey, clothed with white hairs; mesopleural tuft reddish above, the red hairs appearing as a stripe separating the white hairs of the pleurae from the whitish lateral stripes of the thorax; squamae pale with a long, dense fringe of white hairs; halteres with knobs somewhat brownish.

Abdomen short and broad, about as long as its greatest width; across the basal segment and the anterior border of the second extends a band of white hairs, those on the first segment being erect and equal, those on the second short and appressed; the dorsal tomentum otherwise consists of appressed reddish scales and numerous intermixed reddish and black bristly hairs; extending from the third segment to the apex are many white appressed and erect hairs, which become denser towards the apex, so that the apical segments are covered mainly with white hairs, which in an undamaged specimen form bands, the hairs being longest and densest laterally; on the sides of the second, third, fourth and fifth segments

are numerous long, black and intermixed reddish hairs, forming tufts; venter with white appressed hairs medianly and small areas of white scales laterally.

Legs reddish-brown, with the coxae greyish, clothed with reddish scales, the femora white scaled at the base and with long black hairs beneath.

Wings dark brown at the base and along the fore margin for almost their total length and about one-half their breadth, the rest of the wing being hyaline; the brown area usually contains three hyaline spots, the first two being small and placed in the median basal cell and near the origin of R_1 , the third, rather large and contained in cell R_2 ; the inner border of this coloured area is very irregular and is composed of three distinct curves, the basal and largest one descending to colour one-third of cell M_1 , the second, the basal third of cell mc , and the third, which is rounded, the apical portion of mc ; at the extreme apex of the brown area, a fourth hyaline spot is sometimes apparent.

The female is similar, the eyes being wide apart; the frons is clothed with golden scales, with long black hairs above.

Length of body, 8-10 mm.; of wing, 10-12.5 mm.

Hab.—Q'land: Brisbane (August-September); N. S. Wales: Sydney (July-September).

This beautiful species is apparently the first Bombyliid on the wing, two specimens in the collection of Mr. A. J. Nicholson being taken at Lindfield in July. Around Brisbane its earliest record is August, when it is rather plentiful.

BOMBYLIUS HILARIS Walker.

Bombylius hilaris, Walker, *List Dipt. Brit. Mus.*, ii, 1849, 274; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 73; 1923, 85.

♂. Head mainly grey; occiput as in *pictipennis*; ocellar tubercle with some long black hairs. Eyes contiguous; frontal triangle small, clothed with appressed reddish scales; face prominent between the eyes, clothed with dense reddish and numerous, black, bristly hairs, the latter more or less encircling the former; beard thin, white. Proboscis black, slender; palpi small, slender, with some longer apical hairs. Antennae entirely black, the first segment with some long black and intermixed reddish hairs, the third longer than the first and second segments together, slender, and provided with a stout style somewhat subapical in position.

Thorax similar to that of *pictipennis*, though the pleurae and breast are red haired; halteres with darkened knobs; squamae dark, with a yellowish fringe.

Abdomen short and broad, and hardly as long as broad, black, the basal segment rather greyish; there is a basal white band as in *pictipennis*, the red scales being also present; the second segment possesses long red hairs laterally, these hairs becoming shorter and intermingled with white hairs towards the apex; from the third segment to the apex, white scales are apparent, forming thin white bands, more conspicuous on the apical segments; the bristles are long, thin and black; the venter is clothed with red scales, black towards the apex.

Legs brown to brownish-red with grey coxae, clothed with somewhat golden scales, the femora with long black hairs below; pulvilli pale.

Wings divided into an upper dark brown half and a lower hyaline half, the dividing line being irregular and consisting of three waves, the apices of which are practically of an equal depth in the wing; there is a single hyaline spot near the apex of cell R_1 .

♀. Frons very broad, clothed with red scales and long black bristly hairs; pleurae and breast white haired; mesopleural tuft reddish above.

Length of body, 7.9 mm.; of wing, 8.5-10 mm.

Hab.—N. S. Wales: Armidale, Darlington (September); W. Australia: Mundaring.

At first glance this species is very similar to *pictipennis*, but in the latter species the hairs of the face are more brownish than red, the pleurae in the male are mainly white haired, the abdomen bears tufts of long black and reddish hairs laterally, the venter has white scales on the sides, and in the wings the inner border of the brown is much more irregular, the apices of the waves in *hilaris* being almost on the same level, and the hyaline spots of *pictipennis* being at most replaced by lighter areas.

BOMBYLIUS AUSTRALIANUS Bigot.

Bombylius australianus, Bigot, *Ann. Soc. ent. France*, (7), lxi, 1892, 364; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 73; 1923, 86.

♂. Head mainly grey, the frons somewhat darker; occiput little convex, clothed with dense, short, equal, reddish hairs, which become paler below to the very pale golden, almost whitish beard. Eyes contiguous from immediately below the ocellar tubercle to near the antennal triangle; frontal triangle small with appressed golden scales; face prominent between the eyes, clothed with golden scales and hairs and numerous, erect, black, bristly hairs; mouth borders pale brownish with a short sparse golden moustache; facial groove deep and well marked. Proboscis black, long and slender, with enlarged labella; palpi small, about one-third the length of the proboscis. Antennae entirely black, the first segment with long black hairs, the third elongate, about one and one-half times the length of the first and second together, and provided with a distinct and rather stout style.

Thorax black, greyish laterally, clothed with appressed, golden scales, and dense, short and equal reddish hairs, with a stripe of whitish or very pale yellowish hairs on each side, which extends from the postalar callus to the collar; prealar bristles strong, short and brownish, postalars long, thin and black; scutellum reddish, black basally, clothed with golden scales and bearing long, black bristles; pleurae grey, with somewhat golden hairs, the mesopleural tuft reddish above, so that the golden hairs of the pleurae appear separated from the whitish lateral stripe of the thorax by a line of reddish hairs; halteres with yellow knobs; squamae pale with a pale golden fringe.

Abdomen black, somewhat rounded, but rather longer than its greatest width, the basal segment with a distinct but narrow band of erect reddish hairs, the remaining segments with dense golden scales and scattered golden hairs, densest on the sides, and lighter in colour than the hairs on the first segment; bristles black; venter with pale golden tomentum and bristles.

Legs mainly pale reddish with grey coxae and darker tarsi, clothed with reddish scales, the femora with long, black hairs below, the scales in certain lights appearing whitish, and the fore and middle femora sometimes black basally.

Wings subhyaline, brownish at the base and along the fore margin to the apex of cell Sc, the colour including the basal portion of cell Cu, the basal two-thirds of cell M, and about one-half of cell R₁.

♀. Frons very broad, clothed with golden scales and erect black, bristly hairs; pleurae, breast, and venter white haired, the mesopleural tuft with reddish and intermixed black hairs above; legs somewhat paler, the white scales more apparent, and the femora white haired at the base and beneath.

Length of body, 7-12 mm.; of wing, 7.5-10 mm.

Hab.—Queensland: Brisbane (August-January); N. S. Wales: Sydney (September-January), Kosciusko (February), Woodford (November); Victoria: Gisborne (December).

Hardy (*Proc. Roy. Soc. Tasm.*, 1924) makes *tenuicornis* synonymous with *australianus*. The former species, however, was described with both Australia and Tasmania as localities, and as far as is known the species identified by me as *australianus* is confined to the mainland.

BOMBYLIUS CHRYSENDETUS White.

Bombylius chrysendetus, White, *Proc. Roy. Soc. Tasm.*, 1916, 195; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 74; 1923, 86.

♂. Head mainly greyish, the mouth borders pale yellowish; occiput little convex, clothed with appressed golden scales and dense, short and equal yellow hairs which become much paler to the thin sparse beard below. Eyes contiguous from beneath the ocellar tubercle to near the antennal triangle, the upper facets distinctly larger, their demarcation from the smaller, lower facets very evident; frontal triangle small, the median groove well marked, clothed with appressed golden scales; face with numerous black, bristly hairs and a thin but long, yellowish moustache; facial groove well marked. Proboscis black and slender; palpi short and thin, with long hairs at the apex; ocellar tubercle black, with some long black hairs. Antennae entirely black, the first segment with long black hairs, the second about two-thirds the length of the first, the third longer than the first two together, the basal two-thirds somewhat oval, the apical third linear, with a small but distinct apical style.

Thorax black, clothed with short, dense and equal yellow hairs and appressed golden scales; prealar bristles stout and pale, postalars long, thin and black; scutellum black, clothed with appressed golden scales and yellow hairs and bearing long, black bristles; pleurae grey, with yellow hairs, somewhat paler on the breast; squamae yellow, with a thin paler fringe; halteres with yellow knobs.

Abdomen somewhat oval, longer than broad, clothed with shining golden scales and erect yellow hairs, the former predominating and the latter rather sparse, but densest laterally, and forming a distinct band on the first segment; bristles mainly black; venter grey, clothed with paler appressed tomentum and erect bristly hairs.

Legs with the coxae grey, the femora yellow, black at the apices, the hind femora more so, the anterior and middle tibiae yellow, the posterior tibiae brown, tarsi dark; the femora are clothed with golden scales, somewhat whitish beneath, and with long pale hairs; hind femora with 6-8 long spines below.

Wings hyaline, with base and fore margin brown; the veins C and Sc appear contiguous except at the extreme apices, the colour appearing darker at this spot; apical cross-vein of mc much reduced.

♀. Frons very broad, clothed with appressed golden scales and some erect, black, bristly hairs; face mainly covered with pale golden or yellowish hairs.

Length of body, 3.5-6 mm.; of wing, 4-6.5 mm.

Hab.—Queensland: Brisbane (October), Chinchilla (October), Eidsvold (October); Tasmania: George Town (December).

White compares this species with Walker's *Bombylius nanus*, and says, "This species bears a considerable resemblance to *B. nanus* Walk. from Western Australia. It is probably distinct, but the type being in bad condition, the question cannot be

satisfactorily settled until more specimens from Western Australia are available for comparison".

This species varies somewhat in the colour of the legs. The series examined consisted of 12 ♂ and 9 ♀, 16 of which were from George Town, Tasmania. The femora are usually yellow, black apically, but in 3 ♂ from Tasmania they are dull reddish, and in two others the posterior femora are almost wholly black. The tibiae may be yellowish, sometimes black apically, and sometimes reddish, black apically.

BOMBYLIUS RUBRIVENTRIS Bigot.

Bombylius rubriventris, Bigot, *Ann. Soc. ent. France*, (7), lxi, 1892, 365; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 74.

♂. Head mainly grey; occiput clothed with dense, short and equal yellow hairs, which become paler to the almost whitish beard below; eyes contiguous for about one-third the length of the frons; frontal triangle small, covered with appressed, yellow scales and some black hairs; face projecting between the eyes, covered with dense, erect, yellow hairs, somewhat paler on the cheeks; ocellar tubercle black, with some long, black hairs. Proboscis very long and slender, black; palpi small, black; mouth opening very broad. Antennae mainly black, as long as the head, the first segment with some long black hairs, the third longer than the first and second together, with a distinct, slender, apical style.

Thorax blackish, covered with dense, short and equal yellow hairs, with some black hairs intermixed; bristles weak, yellowish; scutellum black, with similar yellow hairs, the bristles long, thin, and mainly black; pleurae and breast grey, clothed with pale yellow hairs, the mesopleural tuft darker above; squamae pale brown with a short yellow fringe; halteres yellow.

Abdomen broad and rounded, the first segment black, the remainder yellow, with a median black, dorsal stripe, the stripe being denticulated at the anterior and posterior borders of each segment, the whole clothed with yellow hairs, densest laterally; bristles forming complete rows on the posterior borders of each segment, black, longest apically; venter dark grey, the posterior borders of the segments almost a pale brown, yellow pollinose.

Legs mainly yellowish, posterior tibiae and apices of posterior femora, and tarsi dark brown, clothed with yellow scales, the femora with pale hairs beneath.

Wings clear hyaline, light fuscous at the base and along the fore margin to the apex of cell Sc.

The only female I have seen is of a much smaller size, with a broad frons, clothed with shining yellow scales and black hairs. The abdomen is more reddish than yellow, but this is possibly due to the condition of the specimen.

Length of body, 6-10 mm.; of wing, 5.5-9 mm.

Hab.—Queensland: Westwood (November), Pt. Denison.

The identification of *rubriventris* has puzzled me for quite a while. There are three or perhaps four species which agree in many points with Bigot's description. Bigot, however, mentions the wings as being hyaline, and the species described above is the only one in which this is the case. In the others the wings are smoky or subhyaline, brown at the base and along the fore margin for some depth. Unfortunately these species are only represented by one or two specimens in a rather badly damaged condition. A short description of each of these would not, I think, be amiss.

1. A large black species from the Atherton Tableland, North Queensland, clothed with golden yellow hairs and possessing a red scutellum, a deep red abdomen with a narrow, almost parallel-sided, median black stripe. The wings are subhyaline, dark fuscous at the base and along the fore margin, the colour descending to cell M, its outline suffused.

2. A medium-sized species from Stanthorpe, Queensland, with a black scutellum, a red abdomen with a broader, black, denticulated stripe, and clothed with yellowish hairs. The wings are smoky, the base and fore margin dark brown, the colour more defined and deeper than in the previous species.

3. A dark brownish species from Galston (New South Wales) and Brisbane (Q'land), clothed with a pale brownish pubescence. The abdomen is tinged red, with an extremely broad black, denticulated stripe, the apical segments appearing all black. The wings are similar to those of the preceding species.

Species not Recognized.

BOMBYLIUS CONSOBRINUS Macquart.

Bombylius consobrinus, Macquart, *Dipt. Exot.*, suppl. 2, 1847, 54; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 75.

"Flavo hirtus. Pedibus rufis. Alis fuscis, basi limboque externoque fuscis.

"Long. 2 l. ♂, ♂, ♀. Trompe longue d'une ligne un tiers. Face et front d'un fauve grisâtre. Antennes: les deux premiers segments noirs. Thorax et abdomen en grande partie dénudés. Tarses bruns. Ailes: première cellule postérieure fermée, à nervure terminale aboutissante au milieu de la partie de la sous-marginale au-delà de l'angle; petite transversale située au milieu de la discoïdale.

"De la Nouvelle-Hollande et de la Tasmanie".

BOMBYLIUS ALBICINCTUS Macquart.

Bombylius albicinctus, Macquart, *Dipt. Exot.*, suppl. 2, 1847, 54; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 74.

"Rufo hirtus. Abdomine albo fascialio. Pedibus nigris, tibiis rufis. Alis hyalinis limbo externo fusco.

"Long. 3 l. ♀. Face d'un jaune blanchâtre. Front à duvet fauve et poils noirs. Antennes noirs. Thorax et abdomen à fourrure fauve; quatrième segment de ce dernier à longs poils blancs au bord antérieur. Ailes: première cellule postérieure fermée, à nervure terminale aboutissante aux deux tiers de la partie de la sous-marginale, au-delà de l'angle; petite transversale située au milieu de la discoïdale.

"De la Tasmanie".

BOMBYLIUS NANUS Walker.

Bombylius nanus, Walker, *List Dipt. Brit. Mus.*, 1849, 278; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 74.

"Niger, pilis fulvis rufisque vestitus, pectore albo piloso, abdomine pilis flavis rufisque vestito subtus cano, antennis nigris, apice piceis, femoribus flavis, tibiis ferrugineis, tarsis piceis, alis subcinereis, basi et ad costam fuscis.

"Body black, thickly clothed with bright tawny and red hairs; a tuft of black bristles on the crown of the head, whose front is thickly clothed with shining yellow hairs; feelers nearly as long as the head; first and second joints black, and thickly beset with black bristles; 2nd joint much shorter than the first; 3rd joint piceous, spindle shaped, nearly as long as the first and second; fourth joint very small, with

two or three bristles at the tip; mouth black, shorter than the chest; eyes piceous; breast clothed with white hairs; abdomen with alternate bands of bright yellow and red hairs; underside hoary; legs slightly clothed with bristles and hairs; thighs yellow, with a ferruginous stripe from the base to the tip, which like the shanks is also ferruginous; feet piceous; wings slightly grey, brown at the base and along the fore border till near the tips; the brown colour occupies rather less than half the surface of the wing; wing ribs and veins piceous, the latter black towards the tips; poisers tawny.

"Length of the body, $2\frac{1}{2}$ l.; of the wings, $6\frac{1}{2}$ l.

"West Australia".

Genus DISCHISTUS Loew.

Dischistus, Loew, *Neue Beitr.*, iii, 1855, 45; White, *Proc. Roy. Soc. Tasm.*, 1916, 192; Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 68; 1923, 82.

Genotype, *Bombylius minimus* Schnk, by Brunetti's designation (1910).

In general characters similar to *Bombylius*, but the cell R_3 is open.

Range.—Europe, Asia, Africa, South America, Australia.

At the present time the limits of this genus appear ill-defined. Bezzi has placed a large number of species from South Africa in the genus, the relative length of the cells R and M being apparently the only constant character. These species vary in the proximity of the antennae, the width of the frons at the vertex in the male, the bareness of the metapleurae, and the development of the alulae. The same divergence of characters is to be found among the Australian species, though not so noticeably. Three species are placed in the genus, all of which are regarded as new. They all agree in having approximate antennae, contiguous eyes, and wings with cell R longer than cell M. Both *formosus* and *pallidoventer* have a very short, stout, proboscis, an elongate abdomen, somewhat conical in shape, and narrow, slender wings, with the alulae much reduced, whilst in *perparvus*, the proboscis is very long and slender, the abdomen short and broad, and the wings stout. It is more than likely that these three species belong to two distinct genera, but at the present time their separation is not convenient.

Distribution.—No records of the genus are known from South Australia or Western Australia. The most widely distributed species appears to be *pallidoventer*, which is known from Tasmania, Victoria, and New South Wales. Queensland possesses the other two species *formosus* and *perparvus*, both of which no doubt have a wider southern and western range.

Key to the Species of *Dischistus*.

1. A small species with a short and broad abdomen; wings stout . . . *perparvus*, n. sp.
- Medium-sized to large species, with a conical abdomen, and long narrow wings . . . 2
2. Wings with the costal third for its full length, fuscous *pallidoventer*, n. sp.
- Wings at most brownish at the base and for a short distance along the fore margin *formosus*, n. sp.

DISCHISTUS FORMOSUS, n. sp.

♂. Head mainly grey; occiput somewhat flattened above, slightly convex below, clothed with dense, bright yellow hairs, which become much paler below to the beard. Eyes contiguous from immediately beneath the ocellar tubercle to near the antennal triangle, which is small and clothed with appressed golden scales; face, prominent between the eyes, clothed with dense black hairs, and with a bright, yellow moustache; cheeks much reduced. Proboscis very short and stout, with

much enlarged labella; palpi slender, about one-third the length of the proboscis. Antennae as long as the head, the first segment rather short, with dense, black hairs, the second about two-thirds the length of the first, with short black hairs, the third much longer than the first and second together, somewhat linear and stout, and provided with a small slender style placed on the inner edge of the broad apex.

Thorax jet-black, clothed with appressed, golden scales, and dense, erect, short and equal, darker yellow and a few intermixed black hairs; notopleural bristles stout and black; scutellum black, with golden pile and long, thin, black bristles; pleurae and breast grey, pale yellow haired; halteres slender, with reddish knobs; squamae brownish, with a long and dense yellow fringe.

Abdomen black, somewhat conical in shape, about as long as the thorax, covered with appressed, golden scales and pale golden or bright yellow hairs, densest laterally, and with rows of long, thin, black bristles or bristly hairs; genitalia brownish; venter grey, covered with appressed very pale yellow hairs, with some pale, bristly hairs intermixed.

Legs mainly brown, the coxae greyish and the apical tarsi darker, the femora with pale golden scales and long yellowish hairs beneath, the tibiae with appressed black hairs; spines black; spines on fore tibiae very short and weak; pulvilli pale.

Wings slender and rather narrow, pale smoky, almost hyaline, yellowish at the base and along the fore margin for about two-thirds the length; cell Sc much reduced; alula much reduced; R_{2+3} little curved at apex; r-m placed well beyond the middle of the discal cell, the cell at this point being rather broad; cell M_3 almost square in shape.

Length of body, 10 mm.; of wing, 9.8 mm.

Holotype ♂, Brisbane, Queensland, 3rd September, 1927, J. Mann.

The female has a much broader frons clothed with golden scales and erect black hairs, but is otherwise similar to the male.

Length of body, 11 mm.; of wing, 10 mm.

Allotype ♀, Brisbane, Queensland, 9th September, 1927, F. Roberts.

Paratypes: 8 ♂, 5 ♀, Brisbane, September, 1927, J. Mann; 1 ♂, 1 ♀, Brisbane, August, G. H. Hardy; 1 ♂, 2 ♀, Brisbane, September, F. Roberts; 2 ♂, 1 ♀, Brisbane, September, A. P. Dodd.

The hairs of the body appear to have a greenish tinge, more noticeable on the occiput and thorax, the general colour being a golden yellow tinged green.

The holotype and allotype are in the Queensland Museum.

DISCHISTUS PALLIDOVENTER, n. sp.

♂. The head is mainly grey; occiput somewhat flattened above, more convex below, clothed with dense, pale yellow hairs, with a distinct fringe of longer, similar hairs above and contiguous with the posterior eye-margins. Eyes contiguous from immediately below the ocellar tubercle to near the antennal triangle. Frontal triangle rather small, clothed with appressed, golden pile and some short, black hairs; face projecting between the eyes, clothed with dense, soft, pale yellow hairs, which become extremely pale on the lower third of the cheeks and chin, forming a pale, shining beard; between the upper mouth borders and the base of the antennae are some dense, erect, black hairs encircling the yellow hairs of the face for a short distance; mouth opening rather narrow. Proboscis short and slender, little more than twice the length of the mouth opening; palpi small and very slender, black. Antennae as long as the head, approximate, though

distinctly separated at the base, black, with greyish reflections; the first segment is rather short, about equal in length to the second, both first and second segments with dense black hairs; the third is longer than the first two segments together, somewhat oval in shape, being broad medianly and tapering from thence to the blunt apex; style distinct and subapical.

Thorax black, clothed with appressed, bright golden scales and dense, erect, short and equal, pale yellow hairs, with numerous intermixed black and pale, bristly hairs; notopleural bristles short and black; scutellum black, clothed like the thorax, with long, thin, black bristles; pleurae and breast greyish, clothed with very pale yellow hairs, the mesopleural tuft darker above and below the wing; squamae brownish with a yellow fringe; halteres with slender, brownish stems and blackish knobs.

Abdomen elongate and conical in shape, as long as the head and thorax together, jet-black, and somewhat shining on the anterior margins of the segments, and narrowly pale reddish on the extreme lateral margins; the whole is clothed with appressed, shining golden scales and erect, yellowish hairs; the bristles are thin and black, and form complete rows on the posterior borders of the segments; there is a distinct band of erect, short, pale yellow hairs on the basal segment, which is continued laterally, and across the anterior border of the second segment a narrow band of white hairs, this segment also bearing pale yellow hairs on its sides; the venter is very pale greyish, clothed with appressed, dense, shining, pale hairs, densest and longest laterally.

Legs mainly yellow, the coxae greyish and the apical tarsi dark brown, clothed with pale scales, these scales being white beneath the hind femora and tibiae; femora with long, pale hairs beneath; pulvilli pale; spines black.

Wings long and narrow, the alula much reduced, subhyaline, but brown at the base and along the fore margin for the whole of its length, and more than one-third but less than one-half the breadth, the colour being rather paler near the apex; cell *mc* rather narrow, the vein *r-m* being placed well beyond its middle; *R*₂₊₃ curved so as to meet the costa at a right angle.

Length of body, 9.5 mm.; of wing, 10 mm.

Holotype ♂, Hobart, Tasmania, 14th March, 1917, G. H. Hardy.

Paratypes: 1 ♂, Hobart, 10th March, 1917, G. H. Hardy; 3 ♂, Chelsea, Victoria, L. B. Thorn, 5th April, 1910, and 16th March, 1919; 1 ♂, Blue Mts., N. S. Wales, 26th February, 1922, E. W. Ferguson; 1 ♂, National Park (Gundamain), N. S. Wales, 4th April, 1925, I. M. Mackerras.

The holotype is in the Queensland Museum.

DISCHISTUS PERPARVUS, n. sp.

♂. Head mainly blackish-grey; occiput little convex, silver grey laterally, clothed with short, dense, equal whitish hairs. Eyes contiguous for about one-third the length of the frons, their upper facets distinctly enlarged; ocellar tubercle black, with some long, bristly black hairs. Frontal triangle large, with a rather indistinct median groove; face little prominent, clothed with erect black hairs; mouth opening with grey borders, not very long or broad; chin grey-black, with a sparse, pale brownish beard. Proboscis very elongate and slender, almost three times the length of the head, with little enlarged labella; palpi extremely short, brownish, with sparse white hairs. Antennae not as long as the head, segments one and two greyish, the third black; first segment not quite twice as long as the second, with long black hairs; the third about as long as the first and second together, strap-shaped, with a minute, subapical, spine-like style.

Thorax black, clothed with short, dense, equal, pale brownish hairs which, viewed from the front, appear whitish laterally, and appressed thin, golden scales, with intermixed pale and dark bristly hairs; scutellum similarly covered, with longer pale or whitish bristles; pleurae and breast rubbed, but the pleurae appear to be clothed with brownish hairs and the breast with intermixed black hairs; halteres pale brown with much enlarged black knobs; squamae pale, with an exceedingly short and sparse whitish fringe.

Abdomen black, short and rounded, hardly as long as broad and about as broad as the thorax, covered with appressed thin, golden scales and scattered, erect, whitish, bristly hairs; the first segment bears a distinctive band of dense, whitish hairs; on the posterior border of the same segment, overlapping on to the second segment is a narrow band of silvery white, appressed tomentum, rather thin laterally; laterally, the abdomen is clothed with sparse white hairs, densest and shortest basally, the third to the apical segments bearing depressed, white pile, which encroaches on the dorsum for a short distance along the anterior borders of each segment, becoming more conspicuous apically; venter thinly white pollinose.

Legs with the coxae blackish, the fore femora reddish, the middle femora reddish, pale brown apically, the hind femora and all tibiae pale brown, the whole clothed with white scales, which, in certain lights, appear brownish beneath; hind femora with some long, black spines beneath.

Wings stout and hyaline, black at the base and along the fore margin to the apex of cell Sc, the colour faintly present in cell M and around the vein r-m.

Length of body, 6 mm.; of wing, 6 mm.

Holotype ♂, Morven, Queensland, September, 1927, A. P. Dodd.

The holotype is unique and is in the Queensland Museum.

According to White, three further species apparently belong to this genus, these species being *antecedens*, *allus*, and *immutatus*, all of which were described by Walker. Macquart's *crassilabris*, placed by Hardy among the species of *Dischistus*, I have identified as a species in which the palpi are two-jointed and therefore not belonging to the Bombyliinae.

None of the three former species has been recognized, their original descriptions being appended herewith in this genus on the authority of White.

DISCHISTUS ANTECEDENS (Walker).

Bombylius antecedens, Walker, *List Dipt. Brit. Mus.* ii, 1849, 293.—*Dischistus antecedens*, Hardy, *Proc. Roy. Soc. Tasm.*, 1923, 83.—*Sisyromyia antecedens*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 72.

"Mas. Niger, pilis canis vestitus, capite setis nigris armato, antennis pedibusque nigris, alis subcinereis.

"Body black, thickly clothed with long shining hoary hairs; eyes red; front and clypeus thickly beset with black bristles; mouth much more than half the length of the body; lips black; feelers black; first joint linear, second joint not half the length of the first; third joint much longer than the first and second, straight beneath and forming an obtuse angle above, where it is furnished with some long black hairs; legs black, clothed with some very short black hairs; wings tinged with grey; fore border slightly tinged with tawny colour; wing ribs and veins piceous, the latter black towards the tips; poisers yellow, very long with black knobs.

"Length of body 2 lines; of the wings 5 lines.

"New Holland".

DISCHISTUS ALTUS (Walker).

Bombylius altus, Walker, *List Dipt. Brit. Mus.*, ii, 1849, 288.—*Bombylius pinguis*, Walker, *List Dipt. Brit. Mus.*, ii, 1849, 290.—*Sisyromyia altus*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 72.—*Sisyromyia pinguis*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 72.—*Dischistus altus*, Hardy, *Proc. Roy. Soc. Tasm.*, 1923, 83.

"Fem. Cinereus, pilis fulvis et nonnullis rufis nigrisque vestitus, subtus albo pilosus, antennis nigris, pedibus ferrugineis, tarsis piceis, alis cinereis basi et ad costam fulvis.

"Body grey; head clothed with tawny hairs, and having a few black hairs on the crown; underside thickly clothed with white hairs; feelers and mouth black, the latter about half the length of the chest; chest very thickly clothed with short white tawny hairs, which are paler on each side as they approach the white hairs of the breast; the sides are also adorned with red hairs, and a few red and black hairs scattered over the chest and breast; abdomen thickly clothed with tawny hairs, which are very bright on each side towards the tip; its back is thinly clothed with black hairs, which are most frequent at the tip; the underside, with the exception of the sides and tip, is clothed with white hairs; legs ferruginous covered with a hoary bloom and clothed with short whitish hairs and a few black bristles; feet piceous towards the tips; wings grey, tawny at the base and along the sides of the veins of the fore borders for three-quarters the length; wing ribs ferruginous; veins piceous, black towards the tips; poisers ferruginous, with yellow tips.

"Length of the body, 5 lines; of the wings, 14 lines.

"Swan River".

DISCHISTUS IMMUTATUS (Walker).

Bombylius immutatus, Walker, *List Dipt. Brit. Mus.*, ii, 1849, 292.—*Sisyromyia immutatus*, Hardy, *Proc. Roy. Soc. Tasm.*, 1921, 72.—*Dischistus immutatus*, Hardy, *Proc. Roy. Soc. Tasm.*, 1923, 83.

"Mas. Niger, pilis flavis vestitus, antennis femoribusque nigris, tibiis ferrugineis, tarsis piceis, alis limpidis basi costaque fulvis.

"Body black, with a grey bloom, most thickly clothed with pale yellow hairs; there are a few black hairs on the crown of the head which is covered with more and longer black hairs about the base of the feelers; the latter are black, the third joint slightly tapering from the base to the tip and rather shorter than the first and second; mouth black, as long as the chest; palpi also black and more than one-third the length of the mouth; eyes dark red with a bronze tinge; legs ferruginous, with a few black bristles which are mostly on the shanks; hips and thighs, excepting the tips of the latter, black and covered with a hoary bloom; feet hairy piceous; wings colourless, tawny at the base and along the fore borders for two-thirds the length; wing ribs and veins tawny, the latter black towards the tips; poisers tawny, the knobs mostly piceous.

"Length of the body, 4 lines; of the wings, 10 lines.

"West Australia".

It appears to me that *altus*, *immutatus*, and *crassilabris* are synonymic. The former two species, however, were described from Western Australia, and as yet I have no record of the species I have determined as *crassilabris* from this State. Under these conditions, it seems best to follow White until more material is made available.

